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NATIONAL ENERGY BOARD



1981 ANNUAL REPORT



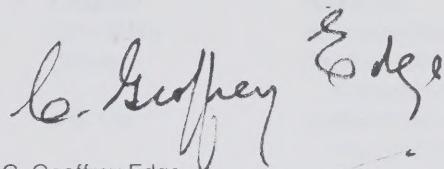
25 March 1982

The Honourable Marc Lalonde, P.C.,
Minister of Energy, Mines and Resources,
Ottawa, Ontario.

Dear Sir:

In accordance with the provisions of Section 91 of the National Energy Board Act, the Revised Statutes of Canada, 1970, chapter N-6, I am pleased to submit the Annual Report of the National Energy Board for the year ended 31 December 1981.

Your sincerely,



C. Geoffrey Edge
Chairman.

Ce rapport annuel est publié séparément dans les deux langues officielles. Des copies en langue française pourront être obtenues du bureau de la division du secrétariat de l'Office national de l'énergie.

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NATIONAL ENERGY BOARD

BOARD MEMBERS

| | | | |
|---------------|--|-------------------|--------------------------------|
| C.G. Edge | <i>Chairman</i> | J. Farmer | <i>Associate Vice-Chairman</i> |
| R.F. Brooks | <i>Vice-Chairman</i> | J.R. Jenkins | <i>Member</i> |
| L.M. Thur | <i>Associate Vice-Chairman</i> | J.R. Hardie | <i>Member</i> |
| W.A. Scotland | <i>Associate Vice-Chairman (Designated Officer—Northern Pipeline Agency)</i> | J.L. Trudel | <i>Member</i> |
| | | R.B. Horner, Q.C. | <i>Member</i> |
| | | A.B. Gilmour | <i>Member</i> |

OFFICE OF THE EXECUTIVE DIRECTOR

R. St.-G. Stephens *Executive Director*

OFFICE OF THE SECRETARY

| | |
|-----------------|----------------------------|
| G. Yorke Slader | <i>Secretary</i> |
| K.J. MacDonald | <i>Assistant Secretary</i> |

ENERGY STUDIES

| | |
|---------------|-------------------------|
| K.W. Vollman* | <i>Director General</i> |
|---------------|-------------------------|

ADMINISTRATIVE SERVICES BRANCH

| | | | |
|-----------------|---|------------|---|
| S.H. Goldstein | <i>Director</i> | I. Melzer | <i>A/Director</i> |
| N. Grace | <i>Assistant Director, Administration</i> | G.H. Shaw | <i>Assistant Director</i> |
| M.J. McNamara | <i>Assistant Director, Finance</i> | (Vacant) | <i>Assistant Director, Econometrics and Economic Analysis</i> |
| J.L. Thompson** | <i>Assistant Director, Personnel</i> | J.S. Oh*** | <i>Assistant Director, Data Development and Data Services</i> |

ECONOMICS BRANCH

| | |
|---------------|---|
| I. Melzer | <i>A/Director</i> |
| G.H. Shaw | <i>Assistant Director</i> |
| (Vacant) | <i>Assistant Director, Econometrics and Economic Analysis</i> |
| J.S. Oh*** | <i>Assistant Director, Data Development and Data Services</i> |
| L.B. Harsanyi | <i>A/Assistant Director, Demand Forecasts</i> |

ELECTRIC POWER BRANCH

| | | | |
|--------------|---------------------------------------|-------------|---|
| E.S. Bell | <i>Director</i> | W.A. Hiles* | <i>A/Director</i> |
| A.N. Karas | <i>Assistant Director, Planning</i> | (Vacant) | <i>Assistant Director, Geology and Reserves</i> |
| T. Olszewski | <i>Assistant Director, Operations</i> | K. Poole | <i>Assistant Director, Gas Supply</i> |

ENERGY SUPPLY BRANCH

| | |
|-------------|--|
| W.A. Hiles* | <i>A/Director</i> |
| (Vacant) | <i>Assistant Director, Geology and Reserves</i> |
| K. Poole | <i>Assistant Director, Gas Supply</i> |
| G.C. Hos | <i>Assistant Director, Oil and Alternative Energy Supply</i> |

FINANCIAL REGULATORY BRANCH

| | | | |
|-------------------|---|----------------|---|
| D.G. Johnston**** | <i>Director</i> | S.R. Ironstone | <i>Director</i> |
| D.G. Harris | <i>Senior Advisor</i> | A.L. Browne | <i>Assistant Director, Gas Industry and Market Analysis</i> |
| A. Brown | <i>A/Assistant Director, Research and Special Studies</i> | R.S. Green | <i>Assistant Director, Gas Regulations and Licences</i> |
| G.S. Johnson | <i>Assistant Director, Gas</i> | | |
| J.A. Law | <i>Assistant Director, Oil</i> | | |
| J.W. Bigelow | <i>Chief Auditor, Northern Pipeline</i> | | |

GAS BRANCH

| | |
|----------------|---|
| S.R. Ironstone | <i>Director</i> |
| A.L. Browne | <i>Assistant Director, Gas Industry and Market Analysis</i> |
| R.S. Green | <i>Assistant Director, Gas Regulations and Licences</i> |

LAW BRANCH

| | | | |
|------------------------------|----------------------------------|----------------|---------------------------------------|
| F.H. Lamar, Q.C. (Vacant) | <i>General Counsel</i> | P.G. Scotchmer | <i>Director</i> |
| | <i>Assistant General Counsel</i> | B.P. Leakey | <i>Assistant Director, Evaluation</i> |

OIL BRANCH

| | |
|--------------|---------------------------------------|
| B.P. Leakey | <i>Assistant Director, Evaluation</i> |
| R.B. Stevens | <i>Assistant Director, Operations</i> |

SYSTEMS DEVELOPMENT BRANCH

| | | | |
|-------------|---|-------------------------------|--|
| D. Emmens | <i>Director</i> | T.S. Shwed | <i>A/Director</i> |
| K.E. Begley | <i>Assistant Director, Systems and Operations</i> | R.E. Jackson, Jr. (Vacant) | <i>Assistant Director, Gas Pipelines</i> |

PIPELINES BRANCH

| | |
|-----------------------|---|
| G.E. Marquardt | <i>Assistant Director, Oil Pipelines</i> |
| P.A. Carr (Vacant) | <i>Assistant Director, Right-of-Way</i> |
| | <i>Assistant Director, Environment</i> |
| | <i>Assistant Director, Northern Pipelines</i> |

*Appointed 4 February 1982.

**Appointed 8 February 1982.

***Appointed 4 January 1982.

****Appointed 18 January 1982.

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FUNCTIONS AND RESPONSIBILITIES OF THE NATIONAL ENERGY BOARD

Under the National Energy Board Act of 1959 and subsequent amendments, the Board has two principal responsibilities: to regulate specific areas of the oil, gas and electrical utility industries in the public interest, and to advise the Government on the development and use of energy resources.

The Board on its own initiative may hold inquiries into a particular aspect of the energy situation and prepare reports for the information of the Government, of Parliament and of the general public.

The Board also carries out studies and prepares reports at the request of the Minister.

The regulatory role of the Board encompasses the following fields:

Certificates of Public Convenience and Necessity in respect of Pipelines and Power Lines

The Board grants certificates to construct and operate inter-provincial and international oil and gas and petroleum products pipelines, and international electric power lines. Before permission is granted for construction through a certificate of public convenience and necessity, the Board considers the application at a public hearing.

Pipeline and Power Line Orders

The Board may issue orders approving additions or modifications to existing pipeline systems without calling a public hearing. Such additions and modifications include sections, branches and extensions of pipeline not more than 40 kilometres in length, and ancillary installations such as tanks, pumps, compressors, meter stations, and communications systems. The Board may also by order authorize international power lines of transfer capacity not exceeding 5 000 kilowatts.

Pipeline Utility Crossings

For reasons of safety, the protection of the environment and of other utility services, no pipeline may cross or be crossed by another utility without authorization. Where a pipeline is to cross a navigable water or a railway, leave must be obtained from the Minister of Transport or the Canadian Transport Commission respectively. Crossings of the facilities of other utilities may only be made with the authorization of the Board. Authorization is given by Board order after consideration of all the relevant information.

Pipeline Safety

The Board's Oil and Gas Pipeline Regulations provide for the safe design, construction and operation of pipelines under Board jurisdiction. Commencing with the design stage, applications for pipeline construction are reviewed to ensure compliance with the regulations. Pipeline companies are required to have contingency plans developed in coordination with local authorities to provide for the safety of the public in the event of line breaks during testing or operation. To ensure high standards in the safety of pipeline construction and operation, the Board carries out inspection programs and conducts investigations and reviews of pipeline system performance.

Environmental Protection

The environmental information requirements for new oil and gas pipelines and for modifications or extensions to existing systems and for international power lines are set forth in the Board's Rules of Practice and Procedure. The Board takes into consideration the environmental impact of the construction and operation of oil pipelines, gas pipelines and international power lines. The Board considers such diverse concerns as impact on permafrost soils, erosion and siltation at water crossings, impact on wildlife, preservation of archaeological sites, air emissions, noise, and protection of agricultural soils.

In considering applications the Board ensures that an adequate environmental assessment has been carried out, and that the undertakings of the applicants are appropriate. The Board is responsible for ensuring that the environmental protection measures implemented by the companies are effective. This is accomplished by on-site inspection both during and after construction and through follow-up reporting which is required of the companies.

Export Licences and Orders

The National Energy Board Act requires the Board, in considering applications for export licences, to take into consideration all matters that appear to it to be relevant. It must, among other things, satisfy itself that the quantities of energy involved do not exceed the surplus remaining after allowance has been made for reasonably foreseeable Canadian requirements for that particular form of energy. The Board must also be satisfied that the prices charged for exports are just and reasonable in relation to the public interest.

Regulation of Pipeline Rates, Tolls, Tariffs and Accounting Practices

The Board regulates the rates, tolls and tariffs of pipeline companies under federal jurisdiction to ensure they are just and reasonable and to ensure that there is no unjust discrimination against any person or locality. The rates, tolls, or tariffs allowed reflect, among other things, the capital and operating costs of the pipeline company and the necessity for it to earn an adequate return on its investment so as to be able to attract capital as needed to maintain and extend service. The Board has established uniform accounting classifications and practices which it requires oil and gas pipeline companies under its jurisdiction to use.

Responsibilities under the Petroleum Administration Act

The Board is required to administer certain provisions of the Petroleum Administration Act; namely the imposition and collection of a charge on the export of crude oil and certain petroleum products and the regulation of the price of natural gas in interprovincial and export trade.

Responsibilities under the Northern Pipeline Act.

The Northern Pipeline Act, passed on 12 April 1978, provides authority for the construction of a natural gas pipeline in Canada along the Alaska Highway, as well as for the creation of the Northern Pipeline Agency to oversee the construction of the pipeline. Certain terms and conditions in the legislation require the company to seek various approvals from the Board and from the Minister responsible for the Northern Pipeline Act. The Board's responsibilities relate mainly to financing and tariffs, approval of pipe specifications, granting of leave to open orders and regulation of the operation of the line.

Implementation of Board Decisions

When the Board is prepared to grant a certificate for a pipeline or a power line or to issue a licence for the export of natural gas or electricity, the import of natural gas or the export of oil for a period exceeding one year, it so reports to the Governor in Council through the Minister of Energy, Mines and Resources. If the issuance of a certificate is approved by the Governor in Council, the certificate is then issued by the Board. In the case of export or import applications, licences issued by the Board go into effect on approval by the Governor in Council. A decision of the Board to refuse an application is not subject to referral to the Governor in

Council. The Board's Reasons for Decision on applications are issued as public documents.

Because of the special nature of the trade in crude oil and petroleum products, specifically the use of short-term contracts and the need to make decisions on a daily basis, oil export controls (except for licences for periods in excess of one year) are exercised directly by the Board without reference to the Governor in Council.

Applications for orders authorizing the export of natural gas, ethane, propane, butanes, and ethylene for periods of up to one year are also dealt with by the Board without reference to the Governor in Council. Decisions regarding rates, tolls, and tariffs are made by the Board without reference to the Governor in Council.

Appeals of Board Decisions

The National Energy Board is a Court of Record and with regard to attendance, the swearing and examination of witnesses, the production and inspection of documents, and the enforcement of its orders, it has all the powers vested in a superior court of record.

Under section 17(1) of the National Energy Board Act, the Board may review, rescind or change any order or decision made by it, or may re-hear any application before deciding it. Under section 17(2) of the Act, the Board may change a certificate or licence issued by it, but no such change is effective until approved by the Governor in Council. Parties may apply to the Board, pursuant to these sections of the Act, requesting the Board to review an order, decision, licence or certificate. A decision or order of the Board may be appealed to the Federal Court of Appeal providing the appeal is based upon a point of law or of jurisdiction. Leave to appeal must be obtained upon application made within one month after the making of the Board's decision or order, or within such further times as that Court may allow. Judgments of the Federal Court of Appeal may, with leave, be appealed to the Supreme Court of Canada. The Federal Court of Appeal also has jurisdiction to review and set aside a decision or order of the National Energy Board upon certain stipulated grounds.

The Trial Division of the Federal Court of Canada has exclusive jurisdiction to issue an injunction, writ of certiorari, writ of prohibition, writ of mandamus, writ of quo warranto, or to grant declaratory relief against any federal board, commission or other tribunal.

ORGANIZATION OF THE NATIONAL ENERGY BOARD

In 1981 the Board underwent a reorganization. The main features of the new organization, as is shown in the accompanying organization chart, are the creation of the positions of Executive Director and Director General Energy Studies, and the realignment of the mandates of the Branches of the Board to coincide more closely with the Board's main regulatory functions i.e., the Pipelines Branch is responsible for the Board's responsibilities for pipeline-related matters under Part III of the Act, and the Financial Regulatory Branch for rates and tolls under Part IV of the Act. The position of project manager was created to provide for better coordination and management of certain activities, after the issuance of a certificate. These activities include such matters as insuring compliance with the terms and conditions of certificates and to monitoring of pipeline construction. Project managers have been appointed for the IPL (NW) and TQM pipelines.

Membership of the Board

There were no changes in the composition of the Board during 1981.

Mr. Jacques Farmer, Acting Associate Vice-Chairman was reappointed effective 11 April 1981 to a further term of seven years as a Board Member.

Mr. William A. Scotland, Associate Vice-Chairman, (and the Board's Designated Officer to the Northern Pipeline Agency) was reappointed, effective 8 March 1981, to a further term of seven years as a Board Member.

Executive Director

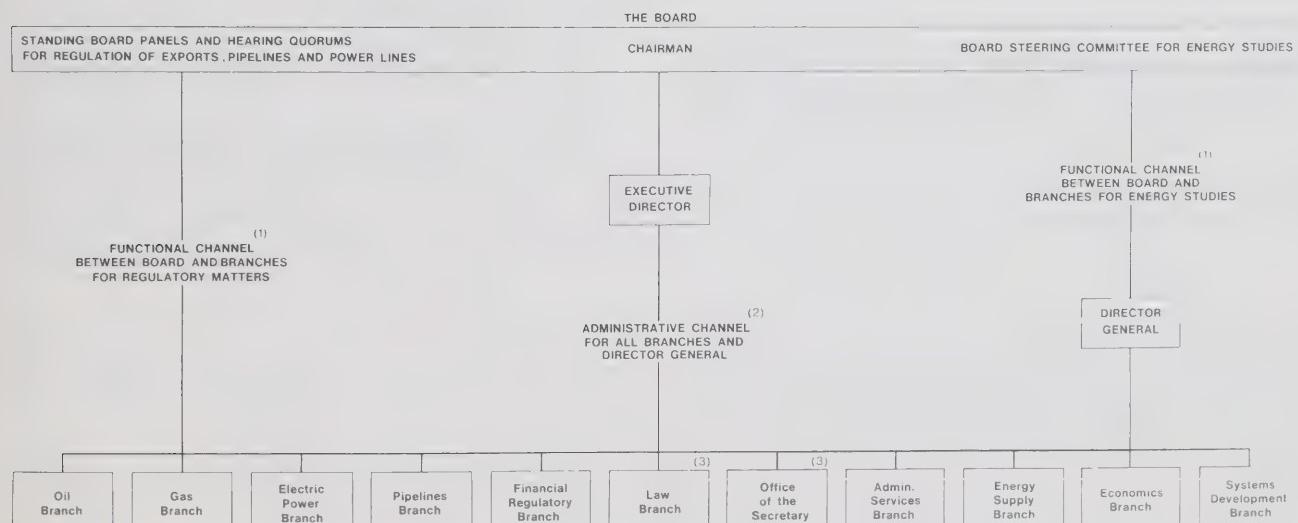
During 1981 the Board created the position of Executive Director to relieve the Chairman of his responsibilities for the day-to-day administration of the Board, including the acquisition and allocation of human and financial resources, and the ensurance of efficiency and effectiveness in Board activities and operations. In September 1981, Mr. Robert St.-George Stephens was appointed Executive Director of the Board.

The Board is divided into eleven separate branches. The following is a brief outline of the responsibilities of each branch.

Administrative Services Branch

The Branch is responsible for the coordination and administration of policies and the provision of advice and services in the areas of financial, personnel, and general administration, official languages, and security.

NATIONAL ENERGY BOARD
ORGANIZATION CHART



(1) Functional means pertaining to activities having a primary relationship to the Board's statutory duties

(2) Administrative means pertaining to activities primarily concerned with management of the Board's staff and the provision of human and financial resources

(3) The Secretary and General Counsel have quasi-legal duties and report directly to the Chairman on certain matters

The Branch also provides service to support the activities of the Board in accordance with government regulations, and formulates policies for the efficient utilization of Board resources.

Economics Branch

The Branch advises the Board on economic and socio-economic matters, particularly with respect to estimating long-term energy demands in connection with the Board's responsibilities under Parts II, III, and VI of the Act. To underpin its energy demand forecasts, the Branch prepares macro-economic forecasts for the Canadian economy. The Branch also maintains an energy statistics unit.

The Branch prepares analyses, as appropriate, of the impact of proposed energy projects on the Canadian economy, on the regional economies of Canada, and on the net economic benefits to Canadians. It also considers the socio-economic impact of such projects.

The Branch is also responsible, under Part III of the Act, for assessing the extent to which Canadians will have an opportunity to participate in a pipeline project ("Canadian Content").

Electric Power Branch

The Branch is responsible for administering the electric power aspects of the Act.

The key responsibility areas of the Electric Power Branch are electricity export licensing, international power line certification and regulatory surveillance. The Branch also prepares supply and demand forecasts for electricity for use in dealing with electrical or other applications and also keeps under review the United States market for electricity.

The Electric Power Branch advises the Board on matters related to electricity by studying and keeping under review matters relating to the production, transportation, sale and exchange of electricity over which the Parliament of Canada has jurisdiction and, if requested, by preparing studies and reports on any matters relating to electricity or sources of electricity.

The Electric Power Branch conducts a continuing review of the planning and operation of electric power systems to maintain a close contact with the "state of the art" of electric power in Canada and elsewhere.

Energy Supply Branch

The Energy Supply Branch is responsible for the energy supply aspects of oil and gas export licence and certificate applications and for the determination of the quantity of hydrocarbons surplus to Canadian needs. The Branch prepares long-term energy supply forecasts based on its own studies and on the results of public inquiries which are held periodically. The Branch also provides expert advice to the Board on matters pertaining to energy supply.

The Branch's mandate on oil and gas supply and hydrocarbon surplus arises principally from three sections of the Act. Part III requires that for certificate applications the Board be satisfied that sufficient oil or gas is available to support the proposed pipeline project. Part VI requires that for licence applications the Board must be satisfied that established reserves plus trend additions are sufficient to meet reasonably foreseeable requirements in Canada before exports are permitted. Pursuant to Part II, the Board may conduct inquiries, studies, etc., on any matters related to the supply of energy. A common use of this power has been to periodically conduct public inquiries to update the Board's long-term forecasts of energy supply.

The Branch keeps under continuous review all established oil and gas reservoirs in Canada; conducts studies of ultimate potential and reserves additions rates; and investigates new supply sources. The Branch is the responsibility centre at the Board for conducting oil and gas supply studies, and as a result its staff is multi-disciplinary, comprising experts in geology, engineering, chemistry and economics.

Financial Regulatory Branch

The Branch has the prime responsibility for rates, tolls and tariffs under Part IV of the Act and Part II of the Northern Pipeline Act. The Branch is responsible for the provision of financial advice in relation to Parts II, III and VI of the Act and for the administration of the collection and audit of petroleum export charges under Part I of the Petroleum Administration Act and costs of transportation related to Part III of the Petroleum Administration Act.

The Branch is also responsible for the auditing of the accounts of pipeline companies under the Board's jurisdiction and for monitoring the performance of pipelines within the framework of regulatory decisions and appropriate financial yardsticks.

Gas Branch

The Branch is the focal point for all gas and gas product related regulatory activity pursuant to Part VI of the Act and for the monitoring and control of all matters associated with

the Board's obligations for the administration of Domestic Gas Pricing under Part III of the Petroleum Administration Act.

The Branch also plays a supportive role in all regulatory activity with respect to gas and gas products pursuant to Parts II, III and IV of the National Energy Board Act. The degree of involvement relates to issues usually involving market and policy related aspects and the calculation of costs of transportation associated with the determination of export flowbacks from natural gas exports to producing provinces. In the matter of energy supply/demand hearings the Branch is responsible for the production of the short-term forecasts of gas and gas product requirements which provide the starting point for longer term forecasts.

Law Branch

The Branch is responsible for advising the Board on its powers and their legal application to the Canadian energy industries under the Board's jurisdiction, including the possible effect of the application of such powers.

The Branch participates on behalf of the Board at public hearings of applications to examine and cross-examine witnesses and to advise the Board on the conduct of its hearing. The Branch also advises and represents the Board in appeals and judicial review of its decisions before the Federal Court of Canada and the Supreme Court of Canada; it reviews and contributes to the preparation of reasons for Board decisions and reports in respect of certificates, licences, orders, and to formal communications to or from the Board. It also advises the Board respecting amendments to the Act, the Regulations, and the Rules of Practice and Procedure.

The Branch advises senior officials on the application of all amendments to the Act and implications of a legal nature.

The Director of the Law Branch acts as senior legal adviser and General Counsel to the Board.

Office of the Secretary

The Office of the Secretary provides administrative control and coordination of all matters brought formally before the Board or panels of the Board, prepares and maintains custody of agenda, minutes, statutory documents, and other official Board records, receives and issues all communications on behalf of the Board, and provides the Board with public relations services, a library information centre, and drafting and graphic arts facilities.

Oil Branch

The Oil Branch provides advice in the general area of oil-related energy matters.

The Branch is responsible for matters within the ambit of Part I of the Petroleum Administration Act dealing with export charges and certain duties under Part II concerning crude oil movements. It is similarly charged in respect of Part II of the National Energy Board Act on questions of oil markets, processing and distribution, and the short-term balance of supply and demand for feedstocks and oil products, with some responsibilities in regard to certain aspects of Part IV of the Act on matters of traffic and discrimination in oil pipeline services. In regard to Part VI of the Act it is the prime source of advice to the Board on crude oil and petroleum product export licensing.

Because of its responsibilities in respect of export licensing and pricing, and pipeline traffic, Branch advice extends to such matters as the allocation of domestic crude oil, to the control of international oil exchanges and to the determination of oil export charges.

Pipelines Branch

The Pipelines Branch is principally responsible for matters relating to pipeline certificates issued under Part III of the NEB Act. It is the principal source of advice to the Board on capital and operating costs, and engineering, safety, right-of-way and environmental matters pursuant to the Board's responsibilities under Parts II, IV, V and VI of the NEB Act and under the Northern Pipeline Act, in respect of pipelines.

Under Part II, the Pipelines Branch carries out studies and advises on technical and economic feasibility, security, and safety-related aspects of pipelines and alternative hydrocarbon transportation systems.

Under Part III, the Branch is responsible for the assessment of applications for construction of new pipeline facilities and for the expansion and extension of existing systems. The Branch develops and is responsible for the enforcement of safety regulations applicable to oil, natural gas, and high vapour pressure pipeline systems. The Branch also assesses the environmental impact of proposed projects as well as mitigative and restorative measures, develops certificate terms and conditions to provide environmental protection, and carries out inspection and monitoring activities to ensure compliance therewith.

The Branch makes recommendations on the acceptability of construction specifications, plans and procedures, it reviews all aspects of facility construction, and it provides advice on the granting of leave-to-open prior to companies placing new facilities in service. The Branch also makes recommendations on issuing orders relating to public safety, and for the replacement, repair or shutdown of facilities. The Branch investigates oil spills, oil and gas leaks, breaks, and fires to determine causes and to establish corrective measures.

Under Part IV, the Pipelines Branch advises on operating costs incurred or projected and on the necessity for or prudence of capital expenditures at such time as these costs are being considered for inclusion in a company's rate base and cost of service.

Under Part V, the Pipelines Branch is responsible for ensuring compliance with respect to land acquisition, utility crossings, pipeline ownership, damage compensation, and right-of-way maintenance. The Branch also provides advice and recommendations to the Board on detailed route selection and land use matters.

Under Part VI, the Pipelines Branch is responsible for developing a data base for some of the input into cost/benefit analyses. The Branch is also responsible for managing the meter inspection program and ensuring measurement accuracy of oil and gas imports and exports.

Under the Northern Pipeline Act the Pipelines Branch is responsible for reviewing construction cost estimates, recommending the approval of pipe specifications and Board issuance of leave-to-open orders, and regulatory compliance in respect of all subsequent operations and maintenance activities.

Systems Development Branch

The Systems Development Branch is responsible for the effective utilization of information systems technology, i.e., data processing and word processing, in support of the Board's statutory responsibilities.

The Branch develops and coordinates all plans for systems to meet the immediate and long-term objectives of the Board, administers the Systems budget and prepares the annual EDP Report and Plan.

The Branch is the Board's contact with central agencies (e.g. Treasury Board, Supply and Services) on information systems, and develops NEB Systems Policies and Procedures ensuring that these comply efficiently with the requirements of those agencies.

STANDING PANELS AND COMMITTEES

The Board assigns much of its ongoing regulatory workload to six standing panels each composed of a quorum of three Board Members. In addition certain Board Members are involved in the work of four committees, which deal with issues affecting the internal management of the Board. The composition of each Panel and committee is shown in the accompanying table.

Standing Panels

In exercising their powers and duties as described below, the Panels refer to the whole Board any matters which, in the Panel's view, raise questions of general policy, involve substantial expenditures on the part of regulated companies, require consideration as to the desirability of a public hearing, or otherwise raise issues considered by the Panel to be of importance to the Board as a whole.

Electrical Panel

The Electrical Panel exercises the powers of the Board in all matters relating to electricity, excluding the issuance of certificates of public convenience and necessity under section 44 of the National Energy Board Act, the issuance of licences under section 82, and any matters which would require the holding of a public hearing.

Financial Regulatory Panel

The Financial Regulatory Panel exercises the powers of the Board with respect to tolls and tariffs under Part IV of the National Energy Board Act on matters relating to gas and oil pipeline companies under the Board's jurisdiction, excluding, with minor exceptions, any matter which necessitates the holding of a public hearing, and matters with respect to pipelines to which the Northern Pipeline Act applies.

Gas Panel

The Gas Panel exercises the powers of the Board under Part VI of the National Energy Board Act and Part III of the Petroleum Administration Act in respect of all matters relating to natural gas, liquefied natural gas, and synthetic natural gas, and all matters relating to propane, butanes, ethane, and ethylene, except for the issuance of licences under section 82 of the Act or any other matter which requires the holding of a public hearing. In addition, the Panel advises the Minister under section 22 of the Act respecting the export price of natural gas.

Northern Pipeline Panel

The Northern Pipeline Panel exercises the powers of the Board under the Northern Pipeline Act and the National Energy Board Act in respect of the Alaska Highway Natural Gas Pipeline. These encompass financing and tariffs,

STANDING PANELS AND COMMITTEES

| PANEL | CHAIRMAN | MEMBERS | ALTERNATE |
|----------------------|-------------|--------------------------|---------------------------------|
| Oil | R.F. Brooks | J.R. Hardie | R.B. Horner |
| Gas | C.G. Edge | L.M. Thur | J. Farmer |
| Electrical | L.M. Thur | R.F. Brooks | J.L. Trudel |
| Pipeline | J. Farmer | J.R. Jenkins | A.B. Gilmour |
| Financial Regulatory | C.G. Edge | J.R. Hardie | J.L. Trudel |
| Northern Pipeline | C.G. Edge | J.R. Jenkins | A.B. Gilmour |
| | | | J.R. Hardie |
| COMMITTEE | | | |
| Executive | C.G. Edge | R.F. Brooks J. Farmer | L.M. Thur R. St.-G. Stephens |
| Internal Audit | C.G. Edge | R.F. Brooks J. Farmer | L.M. Thur R. St.-G. Stephens |
| Energy Studies | C.G. Edge | L.M. Thur | J.R. Jenkins |
| Regulatory Process | R.B. Horner | G. Yorke Slader | F.H. Lamar |
| | | | R.F. Brooks |

approval of pipe specifications, granting of leave to open orders, and the regulation of the operation of the pipeline, but exclude matters requiring a public hearing. The Panel provides a “one-window” approach, on behalf of the Board, in dealing with the pipeline companies, the Northern Pipeline Agency, and United States regulatory authorities on all NEB matters relating to the Northern Pipeline.

Oil Panel

The Oil Panel exercises the powers of the Board under Part I of the Petroleum Administration Act pertaining to the export charge on crude oil, oil products, and oil used as fuel in international transportation. The Panel issues licences under Part VI of the National Energy Board Act for the export of such oil and oil products, oversees the interprovincial movement and allocation of western Canadian crude oil and advises the Minister, under section 22 of the National Energy Board Act, respecting oil-related energy matters.

Pipeline Panel

The Pipeline Panel exercises the powers of the Board in regard to all matters relating to the construction, operation, and maintenance of oil and gas pipelines, more particularly matters relating to pipeline safety and environmental considerations, excluding the issuance of certificates of public convenience and necessity under section 44 of the National Energy Board Act, but including the adherence to conditions specified in such certificates.

Executive Committee

The Executive Committee, which consists of the four senior level Board Members, as well as the Executive Director, deals with long-term, broad issues affecting the Board.

Internal Audit Committee

The Internal Audit Committee keeps the Board's operations under review to ensure that they are administered efficiently, economically, and effectively.

Committee on Regulatory Process

This Committee studies and keeps under review all aspects of the regulatory process, and recommends to the Board measures designed to improve the efficiency and effectiveness of regulations.

Energy Studies Committee

This Committee initiates and reviews studies on any aspect of energy which may be of interest to the Board and which is outside the orbit of other panels and committees.

HIGHLIGHTS OF THE BOARD'S OPERATION IN 1981

Public Hearings

During 1981, the Board conducted all or part of 19 public hearings in locations from St. John's, Newfoundland, to Vancouver, British Columbia, during the course of which it sat for a total of 115 days.

The following summarizes the decisions rendered in 1981 following public hearings.

Gas Pipeline Hearings

Foothills (Yukon) Pipeline

- As reported in the 1980 Annual Report, in July 1980 the Federal Government approved construction of the southern portions (the "prebuild") of the Canadian sections of the Alaska Highway Natural Gas Pipeline.

In August 1981 the Board released its findings on a public hearing held in March and April concerning, among other matters, the tolls to be charged by Foothills Pipe Lines (Yukon) Ltd. in the operation of the western leg of the "pre-build".

In addition, the hearing dealt with certain matters arising from the Board's 1979-1980 tariff hearings, resolution of which was required before operation of the western leg could commence.

The hearing also focused on the Final Design Cost Estimates for the western leg and the eastern leg. The review was necessary prior to the acceptance by the Board of these estimates as the basis on which the Company's cost control performance would be measured under the Incentive Rate of Return Scheme approved by the Board in its decision on the tariff hearing.

The total estimates as filed for the western and eastern legs totalled \$167,379,000 and \$653,942,000 respectively, covering construction of 213 kilometres of pipeline and a meter station in the western leg and 635.4 kilometres of pipeline, three compressor stations, and a meter station in the eastern leg. The Board disallowed about 2 percent of the estimates for the western leg and about 5 percent for the eastern leg.

For rate base purposes the Board authorized Foothills (Yukon) to include preliminary and construction expenditures incurred during the year ending 31 December 1980 totalling \$158,088,000, subject to certain adjustments.

Trans Québec & Maritimes Pipeline Inc.

- As reported in the 1980 Annual Report, that year the Board authorized TransCanada PipeLines Limited to extend its existing natural gas pipeline from St-Lazare, near Montreal, to Lévis/Lauzon, near Quebec City. At that time, the Board denied an application by Q & M Pipe Lines Ltd. to extend the pipeline from Lévis/Lauzon to Halifax.

In 1981 the Board received an application from Trans Québec & Maritimes Pipeline Inc. (TQM) similar to that which had been filed by Q & M Pipe Lines Ltd.

After a public hearing held in Ottawa, Fredericton, Halifax, and Quebec City in March and April 1981, the Board decided to recommend the issuance of a certificate to TQM approving the construction of about 740 kilometres of mainline in Quebec and the Maritimes, and 1 000 kilometres of laterals and sub-laterals to serve communities in New Brunswick and Nova Scotia. The facilities are to extend from Lévis/Lauzon through Quebec and New Brunswick to Halifax and Glace Bay in Nova Scotia.

In December 1981, after the Governor in Council had approved the Board's recommendation, the Board issued Certificate of Public Convenience and Necessity No. GC-68 to TQM. That certificate included a number of conditions to give effect to the purposes and provisions of the National Energy Board Act, and to help the Board to implement its continuing regulatory jurisdiction duty over the construction and operation of the pipeline.

- In June and November 1981, the Board held public hearings to examine two applications by TransCanada PipeLines Limited to modify, between Boisbriand and Lévis/Lauzon, Quebec, the route of the pipeline approved by Certificate of Public Convenience and Necessity No. GC-65 but not yet constructed.

As a result of the June hearing the Board approved a modification in the pipeline route between Boisbriand and Yamachiche, near Trois-Rivières. The new route would take the pipeline through existing utility corridors, thereby minimizing adverse impacts on high-quality agricultural soils.

At the November hearing the Board delivered from the Bench the approval of a further route modification, this time from Yamachiche to Lévis/Lauzon. The new route would follow the north shore of the St. Lawrence River instead of the south shore as previously approved, and again would lessen the impact on farming land by following existing utility corridors.

- In December 1981, Certificates of Public Convenience and Necessity No. GC-64 and GC-65 were transferred from TransCanada to TQM.

TransCanada PipeLines Limited

- In July 1981, the Board approved an application by TransCanada for a certificate of public convenience and necessity to construct and operate additional gas pipeline facilities on its system in Saskatchewan, Manitoba, Ontario, and Quebec.

The Board issued Certificate No. GC-67 approving the construction of some 117 kilometres of pipeline loops (i.e., new pipeline running alongside existing pipeline to increase capacity) and the installation of two new 3 megawatt compressor units.

The Board also authorized another 216 kilometres of loop and six compressor units conditionally authorized in 1980 by Certificate No. GC-66.

The total cost of the construction of the facilities authorized was estimated to be \$343 million.

- In November 1981, the Board conducted a public hearing in Ottawa to examine an application by TransCanada for a certificate of public convenience and necessity to construct and operate the "North Bay Shortcut", a 420.2 kilometre pipeline from North Bay, Ontario, generally following the south shore of the Ottawa River to meet TransCanada's existing pipeline near Morrisburg, Ontario. The total capital cost of the project was estimated to be \$407.8 million.*

Arctic Pilot Project

In June 1981, the Board announced that it intended to hold a public hearing no earlier than October 1st concerning an application by Arctic Pilot Project Inc. and an associated application by TransCanada PipeLines Limited. At the end of September the Board announced that the hearing would commence 24 November 1981.

The Arctic Pilot Project application involved the construction of a natural gas pipeline and liquefaction plant on Melville Island in the Arctic, the transportation of the liquefied natural gas (LNG) in ice-breaking tankers to an eastern Canadian port where the LNG would be regasified, and finally the export of natural gas from Alberta to the United States.

The application by TransCanada is for a certificate to authorize the construction and operation of the associated LNG receiving terminal and regasification plant. It would be located at either Gros Cacouna, Quebec, or Melford Point, Strait of Canso, Nova Scotia.

In addition to the Board's regulatory responsibilities of licensing the gas for export and certificating the regasification plant as part of a pipeline system, the Minister of Energy, Mines and Resources asked the Board to conduct a complete examination of the entire project and to report on all matters as to the Board appear to be relevant respecting the present and future public convenience and necessity of the proposed facilities.

In September, Arctic Pilot Project Inc. amended its application by reducing the quantity of Alberta gas to be exported to an amount equal to that supplied from the Arctic. Subsequently, the Board decided to hear the export component of the application not as part of a future omnibus gas export hearing, as had been announced, but together with all other aspects of the Arctic Pilot Project.

After the announcement of that decision, the Board received separate motions filed by the Inuit Tapirisat of Canada (ITC) and the Baffin Region Inuit Association (BRIA) and the Province of Ontario which were dealt with at a public hearing on 2 November 1981. In respect to the motions for adjournment by ITC and BRIA and the Province of Ontario, the Board decided to change the date of the hearing from 24 November 1981 to 2 February 1982. As to ITC's and BRIA's motion for an order that TransCanada PipeLines Limited be required to make an election between the Gros Cacouna, Quebec and Melford Point, Nova Scotia terminal sites, the Board concluded that it was under no obligation to compel the Applicants to select a site. The Applicant would be required to provide full documentation for both sites. On another motion by ITC and BRIA for security for costs, the Board was not persuaded that it should depart from its previous statements that the Board has no power to award costs. The application for security for costs was denied.

Oil Pipeline Hearings

Interprovincial Pipe Line (NW) Ltd.

- In April 1981, the Board rendered its decision recommending to the Governor in Council the issuance of a certificate of public convenience and necessity to Interprovincial Pipe Line (NW) Ltd. for the construction and operation of a buried oil pipeline from Norman Wells, Northwest Territories, to Zama, Alberta. The decision was reached following five weeks of public hearings in Edmonton, Yellowknife, and Ottawa.

The pipeline, 323.9 millimetres in diameter and some 866 km in length, is to be built at an estimated capital cost of \$360 million and will be used to transport 5 000 cubic metres per day of crude oil and natural gas liquids produced by Esso Resources Canada Limited to existing Canadian markets. Installation of additional pumping capacity could raise the

* The Board's Decision recommending the approval of the application was released in January 1982.

system's capability to approximately 7 150 cubic metres per day. To reach these volumes of production, Esso Resources proposed to expand the existing Norman Wells field and to use secondary recovery techniques.

The Board also issued a tariff order approving the form and content of the tariff for the transportation of petroleum from Norman Wells to Zama providing for a "full cost of service" tariff, including a 16 percent return on equity.

Originally, IPL (NW) planned to have construction of the pipeline completed by the end of 1983 and proposed to start operations in early 1984. However, this schedule changed when on 30 July 1981 the Government announced in approving the project that it required a two-year delay on commencement of field construction and a two-and-a-half-year delay on commencement of pipeline construction. This meant that substantive work on the oilfield expansion would not begin until the summer of 1983 and that pipelaying would not begin until November 1983. The project would thus become operational in mid-1985.

After receiving the approval of the Governor in Council, the Board issued Certificate No. OC-35 to IPL (NW) in November 1981. The certificate contains conditions which the Company must satisfy before construction may begin, including the submission of findings on field tests, financing arrangements, an environmental assessment, mitigative measures for wildlife and fish resources, and inspection and monitoring programs before, during, and after construction of the pipeline system.

Trans Mountain Pipe Line Company

- In June 1981, the Board announced that it was prepared to issue a certificate of public convenience and necessity to Trans Mountain Pipe Line Company, subject to Governor in Council approval, for the construction and operation of a 762 millimetre diameter crude oil pipeline approximately 927 kilometres in length extending from the International Boundary near Sumas, Washington to Edmonton, Alberta.

In a previous report released in January 1980 on the Trans Mountain application, the Board concluded that there was insufficient evidence before it at that time to assess the marine and coastal environmental risks to Canada associated with the operation of a United States crude oil port and associated tanker traffic. Except for the possibility of this marine environmental impact, the Board would have been prepared to grant a certificate for the Trans Mountain pipeline. Accordingly, Trans Mountain was given the opportunity to prepare evidence for a rehearing limited to marine impacts.

In rendering its decision based on new evidence adduced at the rehearing the Board stressed that its mandate was to

determine whether there was a reasonable likelihood that construction and operation of the pipeline would expose the marine and coastal environment of Canada's west coast to an unacceptable increase in the risk of oil spill damage. On the basis of the evidence, the Board concluded that the risk of oil spill damage from tankers in the inner waters of Puget Sound would be decreased by the pipeline supply to the several U.S. Puget Sound refineries from a single port outside the Sound, which Trans Mountain proposed as an integral part of its project.

Among the conditions set out in the Reasons for Decision, therefore, was one requiring that the Company, before commencing construction of the pipeline in Canada, must file with the Board copies of the appropriate United States regulatory authorizations for construction of the Low Point oil port and related pipeline facilities in the State of Washington, and evidence demonstrating to the satisfaction of the Board that the port and facilities would be used to supply in whole or in part the crude oil requirements of the United States Puget Sound refineries at Ferndale, Anacortes, and Cherry Point.

In July 1981, Trans Mountain advised the Board that it had requested an indefinite postponement of a hearing before the Washington State Energy Site Evaluation Council into a west coast oil port stating:

"The recent and continuing dramatic decrease in petroleum product demand in the United States has caused significant changes in supply and distribution patterns and in crude oil prices. Trans Mountain is now of the opinion that a major new oil pipeline cannot be financed under today's business conditions and consequently requested the postponement."

Under the circumstances, Trans Mountain requested that the Board not forward to the Governor in Council its decision on the certificate application until Trans Mountain was able to clarify the status of its application before authorities in the State of Washington. That is where the matter now stands.

Hearings on Electrical Matters

Ontario Hydro

- Following a public hearing in Ottawa in March 1981, the Board issued two licences to Ontario Hydro to authorize the export of firm and interruptible power and energy until 30 June 1991. One authorizes the export of up to 1 200 megawatts and 10 500 gigawatt hours per consecutive twelve-month period, depending on available surplus, of miscellaneous firm power and associated energy. Under the conditions of the licence, individual export contracts for

blocks of firm power must be submitted for the Board's examination and approval before exports can commence. Two such contracts, one for the export of 254 megawatts and approximately 673 gigawatt hours per year to General Public Utilities until the end of 1983, and the other for the export of up to 20 megawatts and 175.2 gigawatt hours per year to the Vermont Public Power Supply Authority until 31 October 1984, were approved by the Board in 1981. The other licence authorizes the export of up to 20 000 gigawatt hours per consecutive twelve-month period to the end of 1983 and 25 000 gigawatt hours per consecutive twelve-month period thereafter, of interruptible power and energy, all less actual exports under the miscellaneous firm licence. In addition, the Board issued a licence to authorize exports, until 31 December 1995, of up to 10 000 gigawatt hours per year of unscheduled circulating power for simultaneous return to Canada. The Board also issued a certificate of public convenience and necessity to authorize the construction and operation of the Canadian portion of a 345 kilovolt, double-circuit interconnection at Niagara Falls with The Power Authority of the State of New York.

New Brunswick Electric Power Commission

- A public hearing was held in Fredericton during November and December of 1981 on an application by The New Brunswick Electric Power Commission for authorization to export 335 megawatts of firm power and associated energy from Point Lepreau nuclear generating station. The application concerned the following: a licence to authorize the export of 100 megawatts to Massachusetts Municipal Wholesale Electric Company under a Unit Participation Agreement to expire on 31 October 1990; a licence to authorize the export of 15 megawatts of firm power, including 5 megawatts of participation power from Point Lepreau, to Eastern Maine Electric Cooperative to expire on 31 October 1990; a licence to authorize the export of 100 megawatts to Boston Edison Company under a Unit Participation Agreement to run to 31 October 1995; and a licence to export an additional 130 megawatts of firm power from Point Lepreau to future customers until 31 October 1995. In addition, seven existing export licences currently held by The New Brunswick Electric Power Commission were to be replaced, with alterations, by new licences to expire on 31 October 1990. The Board's decision was pending at the end of the year.

Hearings on Tolls and Tariffs

Westcoast Transmission Company Limited

- In February 1981 the Board approved an application by Westcoast Transmission Company Limited to have included in its cost of service toll a \$6.2 million overrun in actual versus budgeted expenses for operation and maintenance for the year ending 30 June 1980.

Under the Board's scheme for regulating the tolls of West-coast, budgetary overruns in operating and maintenance expenses are deferred and, if necessary, disposed of through a public hearing. A hearing had been held on this matter in January 1981.

- Following a public hearing in April 1981, the Board issued its Decision on a submission filed by Westcoast setting forth its operating and maintenance expense budget for the twelve-month period ending 31 December 1981.

The Board also examined two aspects of the scheme established in 1979 by Order No. TG-5-79 for the regulation of the tolls being charged by Westcoast. Those were the control of operating and maintenance expenses, and the addition of new items of plant to the rate base.

On the first aspect, the Board concluded that the existing method of controlling operating and maintenance expenses should be modified to establish budgets on a cost centre basis for the pipeline system.

On the second aspect, the Board concluded that Westcoast must apply for inclusion in its rate base of those capital project costs overruns which have exceeded the original estimate of costs above certain limits.

TNPL Inc.

- In December 1981, the Board issued Order No. TO-7-81 to TNPL Inc., (formerly Trans-Northern Pipe Line Company) approving the tolls and tariffs to be charged for the transportation of refined petroleum products effective 1 January 1982. The application was the subject of a public hearing held in Ottawa during November 1981.*

The Board authorized for 1982 a rate of return on rate base of 17.06 percent and a net rate base of \$38,206,966. The total transportation cost of service or revenue requirement approved for the test period from 1 January 1982 to 31 December 1982 was \$23,822,000.

TransCanada PipeLines Limited

- In June and July 1981 the Board conducted a public hearing on an application by TransCanada PipeLines Limited for new tolls and tariffs to be effective 1 September 1981. This constituted Phase I of a two-part public hearing.

The principal issue raised in TransCanada's application was a request for a change in the method of regulation to allow the Company to recover its actual costs subject to minor restraints. The Board, however, decided to continue the

* The Board's Reasons for Decision in the matter were released in January 1982.

existing scheme of regulation in which TransCanada is authorized to recover the cost of service approved by the Board in its tolls for a forward twelve-month period.

TransCanada will be provided with the opportunity to earn a return on equity of 15.75 percent compared with 16.75 percent applied for and 15.0 percent previously authorized. The approved return on rate base is 12.63 percent, compared with 11.1 percent previously authorized.

In addition, the Board adjusted all tolls to be charged for transportation of gas for others to reflect the increased cost of service applicable in the test year.

The Governor in Council on 19 August 1981 prescribed a reduction in the imputed Alberta border price from 177.565 cents per gigajoule to 170.162 cents per gigajoule effective 1 September 1981. No change was made in the city gate prices of natural gas prescribed under the Petroleum Administration Act. The reduction of the Alberta border price permitted TransCanada to recover its newly authorized cost of service.

Inquiry Hearings

Developmental pricing

- In August 1981, as Phase II of the TransCanada Rate Hearing, the Board held an inquiry at the request of the Minister, for the purposes of reporting to him on the necessity for developmental prices for natural gas in the domestic market and any other matters relevant to the pricing of natural gas in the domestic market.

The Board delivered its report to the Minister in November 1981; the report has yet to be made public.*

CANADIAN ENERGY Supply and Demand 1980-2000

In 1981, the Board concluded its "All Energy" supply/demand inquiry hearing. This was the first time that the Board had considered all energy forms in a supply/demand inquiry.

The hearing began in 1980 and was extended to give submitters an opportunity to comment on the expected effects of the Government's National Energy Program (NEP) published in October 1980. The publication of the NEP meant that there was a new energy policy to be put in place, and that federal/provincial agreements required to carry out components of this policy were still to be negotiated. In these cir-

cumstances, when forecasting supply and demand, the Board developed a set of scenarios not only to encompass necessary assumptions regarding the main parameters of demand and supply (i.e., demography, economic growth, prices, and geological, financial, and technological factors) but also to include the most probable outcome of the federal/provincial negotiations.

For forecasting energy demand the Board developed essentially a middle case, a high case and a low case, assuming economic growth for the low and middle cases averaging per annum 3.1 percent for the 1980's and 3.4 percent for the 1990's, and for the high case averaging 4 percent over the whole period. As for prices, the middle demand case was based on the prices included in the National Energy Program. The high demand case incorporated energy prices 30 percent lower than those of the middle demand case while the low demand case incorporated prices which were 30 percent higher. The middle case results, regarded as the most probable, forecast an increase in primary energy demand from 10.4 exajoules in 1980 to 16.2 exajoules in 2000 representing an average growth rate of 2.3 percent per annum. However, total demand for all petroleum products was forecast to decline at 0.8 percent per year up to 1990, mainly as a result of the NEP's off-oil policy encouraging the displacement of light and heavy fuel oil by alternative energy sources such as natural gas. Between 1990 and 2000, the demand for petroleum products was forecast to increase at 1.2 percent per year mainly because of the increasing use of diesel in transportation. Demand for natural gas was forecast to increase at 3.4 percent per year from 1980 to 2000, and demand for electricity was forecast to increase at an average rate of 3.2 percent per year over the same period.

For oil supply, the Board developed a base case, a modified base case, a high case and a low case. For the base case the Board assumed that the NEP would be implemented without modification and provincial policies would not change. For the modified base case the Board assumed that an agreement would be realized by the federal and provincial governments on pricing and revenue sharing in such a way that netbacks required by industry to substantially increase oil supply would be forthcoming. The high and low cases were the Board's estimates of the upper and lower limits to its forecasts based largely on geological and technological factors.

The Board believed that productive capacity was not significantly variable in the short term because of the lead time required to obtain supply from new energy projects. Consequently, available domestic oil supplies were forecast to decline from current levels at about five percent per year until the mid-1980's in both the base case and the modified base case. In the base case, oil production would continue this decline past the mid-1980's with only modest contributions to supply coming from enhanced recovery, new discoveries

* In January 1982, the Minister of Energy, Mines and Resources issued a Policy Statement on gas pricing in the domestic market which incorporated the Board's recommendation on developmental pricing contained in the aforementioned report.

and frontier production. No new supply from oil sands plants was expected in this case. In the modified base case, the Board foresaw the opportunity to increase supply significantly, including major new supply from the oil sands, frontier areas and enhanced recovery.

Turning to supply/demand balances, and comparing the middle case demand with the base case supply, dependence on crude oil imports was forecast to increase to 183 000 cubic metres per day by the turn of the century. This would represent 60 percent of Canadian crude oil needs of 306 000 cubic metres per day at that time. The modified base case for supply incorporated netbacks and prices significantly higher than those proposed in the base case. When comparing this modified base case with the middle case demand, it appeared that imports would increase initially but would then decline for the remainder of the forecast period, representing less than nine percent of Canadian requirements, or 24 000 cubic metres per day by the year 2000.

The outlook with respect to natural gas was far better. Supplies of gas from conventional producing areas were forecast to be adequate to meet foreseeable requirements until 1998 if domestic demand and reserves additions materialized as foreseen by the Board, and if authorized exports were met.

During the period 1980 to 2000 electricity was expected to be in good supply using readily available indigenous primary resources such as hydro and nuclear as well as Canadian and United States coal.

Although the examination of supply costs was not a primary focus of the hearing, considerable evidence was submitted on the escalation in capital and operating costs experienced by the petroleum industry. The Board noted that if this escalation continued it would severely limit the development of new energy supplies.

The Board's findings were detailed in a 223-page report dated June 1981.

Since the report was finished, the September 1981 Federal/Alberta Agreement was concluded. This provided for higher oil and gas prices than those initially contained in the NEP. If the Board were to make a demand forecast based on the new set of prices, this forecast would probably fall between the low and the middle demand forecasts of the report.

Hearings/Applications in Process

Gas Export Omnibus Hearing

- The Board plans to hold a public hearing beginning in March 1982 on several applications to export natural gas to the United States or to vary existing natural gas export licences. The Board expects that other companies may also apply, before the hearing starts, for licences to export natural gas to the United States and to Japan.

The public hearing is to be held in three phases:

- I) a review phase, in which the Board will consider whether the conditions attached to existing licences to export natural gas and the allowance made for licensed volumes should be changed. The Board will also review the appropriateness of the procedures it uses to determine the surplus of natural gas which is available for export. The Board plans to release its findings on the review phase before the commencement of Phase II;
- II) a licence phase, in which the Board will examine the economic, contractual, regulatory, and other aspects of the individual applications for export licences;
- III) a surplus phase, in which the Board will determine whether an exportable surplus exists and if so, to which, if any, of the applicants the Board should recommend that the Governor in Council approve the issuance of export licences;

If export licences are issued, a certificate hearing may be held if additional pipeline facilities are required in Canada to transmit the additional quantities of natural gas.

The Board expects the hearing to last from six to eight months, with a final decision before the end of 1982.

TransCanada PipeLines Limited, 1982 Facilities

- At the end of August 1981, the Board received an application from TransCanada PipeLines Limited for a certificate of public convenience and necessity to construct and operate approximately 292 kilometres of additional pipeline loop in Saskatchewan, Manitoba, and Ontario. Total cost of the facilities is estimated to be \$304 million.

Ontario Hydro

- The Board held a public hearing in January 1982 on an application by Ontario Hydro.

Ontario Hydro applied in May 1981 for a licence to export firm power and energy of up to 1 000 megawatts and 8 760

gigawatt hours per year to Jersey Central Power and Light Company, a subsidiary of General Public Utilities Corporation (GPU), and for a certificate to authorize the construction, operation, and maintenance of the Canadian portion of a 1 200 megawatt international power line under Lake Erie from Ontario Hydro's Nanticoke Generating Station to GPU's Erie West Substation in Pennsylvania, U.S.A. The term of the licence would be ten years from the in-service date of the interconnection, currently scheduled for late 1985. Quantities authorized for export under Ontario Hydro's existing licences would be reduced by amounts exported under the present request.

Alberta Natural Gas Company, Rate Hearing

- In December 1981 Alberta Natural Gas Company Limited applied for an order to vary the Rate of Return on Rate Base authorized by the Board in 1980.

A public hearing on the application is scheduled for March 1982.

Litigation

The Board was involved in the following litigation during the year 1981.

- On 15 September 1977, Westcoast Transmission Company Limited applied to the Board under Part IV of the National Energy Board Act for an Order respecting the tolls that Westcoast proposed to charge for the transportation of natural gas produced in British Columbia and sold by Westcoast to its British Columbia and export customers. The Board ordered that the application be heard in three separate phases. In May 1978, the Board issued its decision on Phase I of the application dealing with depreciation and income taxes. On the application of certain of the intervenors in the proceedings the Board undertook a review of its May 1978 Phase I decision pursuant to subsection 17(1) of the National Energy Board Act. The review decision on Phase I was issued in December 1978. Both Phase I decisions were the subject of appeals under section 18 of the Act and applications for judicial review under section 28 of the Federal Court Act. In October 1979, the Board issued its final decision on the Westcoast application. Westcoast and certain intervenors commenced appeals and applications for judicial review in respect of the Board's final decision. In addition, Westcoast made an application to the Board for a review under subsection 17(1) of the Act of the Board's final decision, which application was dismissed by the Board in December 1979. Westcoast applied under section 28 of the Federal Court Act for judicial review of the Board's December 1979 decision refusing a review. All of the appeals and applications for judicial review in respect of the Westcoast

application were heard by the Federal Court of Appeal in October 1980, at which time Westcoast withdrew its application for judicial review of the Board's December 1979 decision. In January 1981, the Federal Court of Appeal dismissed all the appeals and applications for judicial review resulting from the Board's decision on the Westcoast application.

Two of the parties who had been before the Federal Court of Appeal sought leave from the Supreme Court of Canada to appeal to that Court the judgment of the Federal Court of Appeal. The Supreme Court of Canada after hearing argument upon the matter on 19 May 1981 dismissed the application for leave to appeal on 28 May 1981.

- A Decision of the Board released on 22 April 1981, granting a Certificate of Public Convenience and Necessity to Interprovincial Pipe Line (NW) Limited permitted Interprovincial Pipe Line to construct and operate an oil pipeline extending from Norman Wells, Northwest Territories to Zama, Alberta. The Board had conducted a public hearing as it is required to do with respect to the application of Interprovincial. Four of the intervenors who had participated in this public hearing sought leave in the Federal Court to appeal the Board's decision to issue the certificate. It was argued that there was a notable deficiency of evidence particularly with respect to environmental and regional socio-economic matters; that the Board recognized and commented on the deficiencies in its Reasons for judgment that evidence curing those deficiencies was fundamental and necessary before the Board could be in a position to make its decision to issue the Certificate of Public Convenience and Necessity and that finally because of the fundamental, important and crucial nature of such evidence, the applicants' request for leave to appeal should have had the right to test it by way of cross-examination at the public hearing, thereafter reserving unto themselves the right to reply to this evidence if they considered it necessary by leading rebuttal evidence. The application for leave to appeal was argued before the Federal Court of Appeal on 17 June 1981 and the Court gave its judgment on 30 June 1981 when it dismissed the application for leave to appeal. In doing so, the Court held that all of the matters dealt with by the Board by way of conditions in the certificate were matters which could properly be dealt with in that way; that they were purely administrative matters not required to be dealt with as a part of the quasi-judicial public hearings; and that, in so dealing with these administrative matters, any duty by the Board to act fairly towards the applicants was undoubtedly discharged by the provisions providing for input by the intervenors with respect to compliance with those conditions. The Court held that the applicants had been given significant and substantial participation in the environmental and socio-economic areas of concern to them and as a result they had been dealt with fairly. The court thus concluded that there was no reasonably arguable question of law or jurisdiction which the Court would be entitled to consider.

- On 15 November 1977, the Board commenced a hearing in Fort St. John, British Columbia on two applications by Westcoast Transmission for certificates under section 44 of the Act in relation to two pipelines proposed to be constructed in northeastern British Columbia. At the opening of the hearing, the Union of British Columbia Indian Chiefs requested an adjournment of the hearing, which request was denied by the Presiding Member. On 18 November 1977, the Union applied to the Federal Court, Trial Division, under section 18 of the Federal Court Act for a writ of prohibition, with certiorari in aid, to restrain the Board from proceeding with those applications and to quash the proceedings conducted to that time. On 7 December 1977, the Trial Division of the Federal Court dismissed the Union's application. The Court held on the facts of the case that adequate notice of the hearing had been given to the Union and that the refusal of an adjournment was not tainted with unfairness or a denial of natural justice. On 12 December 1977, the Union appealed the judgment of the Trial Division to the Federal Court of Appeal.

As a result of the hearing in Fort St. John the Board issued Certificates of Public Convenience and Necessity Nos. GC-58 and GC-59 on 3 February 1978 to Westcoast in respect of the two gathering pipelines in northeastern British Columbia. The Union of British Columbia Indian Chiefs applied to the Federal Court of Appeal for leave to appeal the Board's decision under section 18 of the National Energy Board Act. The grounds of that appeal were that there was a denial of natural justice because the Board did not grant that adjournment requested by the Union and that the Board did not have the jurisdiction to include conditions in the certificates requiring the filing of additional environmental information subsequent to the public hearing of a certificate application unless a similar opportunity had been provided to the Union to submit similar information. The Union made a further application for leave to appeal in respect of the Board's subsequent decision that Westcoast had complied with the requirements for additional information specified in the certificate conditions. In this appeal the Union had challenged the Board's decision on the basis that there was a denial of natural justice by the Board in not affording the Union an opportunity to make submissions on the information filed pursuant to the conditions. On 9 May 1978, the Federal Court of Appeal granted leave to appeal to the Union in respect of both appeals. As well, the Union's appeal from the judgment of the Trial Division of the Federal Court was to be heard at the same time. The appeals were argued at the City of Vancouver on 12, 13 and 14 May 1981 with the judgment of the Federal Court of Appeal being rendered at Ottawa on 11 June 1981 at which time the Court dismissed all three appeals with costs. The Court held among other things that the applicant Union of British Columbia Indian Chiefs had been fairly dealt with by the Board and had an adequate opportunity to present its case on the matters with which it was concerned, namely socio-economic matters and that any problems which it encountered in the presentation of its

case basically were caused by a lack of communication within the appellant's own organization. Also, arising out of the same circumstances, an action was launched on 17 March 1978, in the Federal Court by a Mr. Angus Davis and the Union of British Columbia Indian Chiefs against the National Energy Board, claiming general, special and punitive damages for breach of a statutory duty owed to Angus Davis and the Union of British Columbia Indian Chiefs. During 1980 various preliminary motions were heard by the Trial Division of the Federal Court. The action is still pending in the Federal Court.

- In January 1980, the Board amended two Certificates held by Dome NGL Pipeline Limited and Cochin Pipeline Limited authorizing the construction and operation of two high vapour pressure pipelines between Sarnia and Windsor, in the Province of Ontario. Certain of the amendments to the Certificates required the companies to upgrade their pipelines in accordance with the requirements of Part X of the Board's Oil Pipeline Regulations relating to high vapour pressure pipelines. The two companies applied for leave to appeal the Board's decision on the basis that the Oil Pipeline Regulations were being applied retroactively to the two pipelines. On 12 February 1980, the Federal Court of Appeal granted the companies' application for leave to appeal. While the appeals remain pending in that Court, discussions between counsel are taking place in an attempt to settle the appeals.

- In December 1976, the Board issued its decision on an application by TransCanada PipeLines Limited in respect of its tolls and tariffs under Part IV of the National Energy Board Act. As part of that decision the Board disallowed the sale price of natural gas specified in a contract dated 1 November 1969 for gas sold by TransCanada to Saskatchewan Power Corporation (SPC) and Many Islands Pipeline Limited, and substituted for that price the Saskatchewan CD zone rate determined by the Board. The Board had previously decided in April 1976 that the 1 November 1969 contract was required to be filed by TransCanada under subsection 51(2) of the Act. Appeals by SPC on constitutional and other grounds from the Board's April 1976 decision to the Federal Court of Appeal and to the Supreme Court of Canada were dismissed in 1977 and 1978 respectively. In its appeal to the Federal Court of Appeal from the Board's December 1976 decision SPC raised questions inter alia as to the Board's jurisdiction under Part IV of the Act to vary the price stipulated in the contract for the sale by TransCanada of gas transported through its pipeline. On 29 May 1980 the Federal Court of Appeal dismissed SPC's appeal. Leave to appeal from the judgment of the Federal Court of Appeal was granted on 20 October 1980 by the Supreme Court of Canada. The appeal was perfected and was argued before the Supreme Court of Canada on 5 November 1981 with that Court pronouncing its judgment on 17 December 1981 and allowing the appeal with an award of costs to the appellants

throughout but with no costs being awarded against the Board. In essence the Supreme Court assessed the Board's powers under Part IV of the Act and concluded in effect that the Board exceeded its authority in purporting to substitute a new price for that price fixed by the contract between the parties. The Court held that the Board was entitled to make a variation in the price for the purpose of fixing transportation charges but not to establish a new contract price for the gas as a commodity. The Court pointed out that in its view there was nothing in the National Energy Board Act which would give the Board overall price fixing authority in connection with the fixing of transportation tolls.

- On 1 October 1980, Arctic Pilot Project Inc. applied to the Board for a licence under Part VI of the Act for the export of natural gas from Canada to the United States of America. The Arctic Pilot Project involves the construction of a natural gas pipeline and liquefaction plant on Melville Island in the Arctic, the transport of the liquefied natural gas ("LNG") to eastern Canada and the export of natural gas to the United States of America. The Board also received an application dated 15 October 1980 by TransCanada PipeLines Limited for a certificate under Part II of the Act for the construction and operation of an LNG receiving terminal and regasification facilities at Gros Cacouna, Quebec, or Melford Point, Strait of Canso, Nova Scotia, and for orders under Part IV of the Act relating to traffic, tolls and tariffs. Furthermore, the Minister of Energy, Mines and Resources requested that the Board, under Part II of the Act, carry out a general review of the Arctic Pilot Project and report to the Minister on all matters that appear to the Board to be relevant respecting the present and future public convenience and necessity of the proposed facilities.

On 19 June 1981, the Board announced its intention to convene a public hearing with respect to the Part II inquiry and the Part III certificate application to commence no earlier than 1 October 1981. The gas export licence application, which included a net export of Alberta gas, would be heard together with other such applications in an omnibus hearing.

On 3 September 1981, Arctic Pilot Project Inc. amended its application by eliminating the net export of Alberta gas proposed originally. The Board, therefore, ordered that the export application should be considered with the other aspects of the Arctic Pilot Project rather than as part of a future omnibus hearing. The Board established 24 November 1981 as the commencement date for the first phase of the hearing with the export application to be heard in Phase I.

On 25 September 1981, Inuit Tapirisat of Canada ("ITC") and the Baffin Region Inuit Association ("BRIA") brought a preliminary motion requesting, among other things, that TransCanada be required to elect between the Gros Cacouna, Quebec and Melford Point, N.S. terminal sites. ITC/BRIA requested that this motion be heard prior to the

commencement of the public hearing of the Arctic Pilot Project. The Board, not seeing any urgency in the motion, refused this request. ITC/BRIA then brought an application under section 18 of the Federal Court Act for an order compelling the Board to hear its motion. Subsequently, the Board received other motions which made it convenient to hold a preliminary sitting to commence 2 November 1981. ITC/BRIA were, therefore, invited to present their motion of 25 September 1981 at this time. As a result, ITC/BRIA did not proceed with their section 18 application.

Shortly after this, ITC/BRIA brought another application under section 18 of the Federal Court Act to quash the order of the Board including the export application with the other aspects of the Arctic Pilot Project and providing that the export application should be heard in Phase I. This application was argued 29 October 1981 and on 2 November 1981 the Federal Court of Canada, Trial Division dismissed the application.

In addition, ITC/BRIA on 2 December 1981 applied to the Federal Court of Appeal under section 18(1) of the Act for leave to appeal the Board's decision of 5 November 1981 which refused ITC/BRIA's motion to require TransCanada to elect between the Gros Cacouna, Quebec and Melford Point, N.S. terminal sites. The application for leave to appeal is expected to be heard early in 1982.*

Budget and Personnel

For the fiscal year 1981-82 the Board's budget is \$17,157,000 with a person-year allocation of 400. During 1980-81 the budget was \$14,979,000 with 388 person-years.

Official Languages Act

The Board provides service to the public in both official languages.

New Legislation

- Commencing in 1982, the Board anticipates holding many hearings each year on matters relating to Bill C-60 which is an Act to amend the National Energy Board Act. That Act, which changes the expropriation procedures for pipeline rights of way, was passed by the Senate and House of Commons on 11 December 1981 and was given royal assent on 18 December 1981. Proclamation is expected to follow once the necessary regulations have been finalized, probably in the first half of 1982.

* The application was argued before the Federal Court of Appeal on 29 January 1982 and the Court dismissed the application.

A heavy regulatory workload will probably arise from the requirement of the Act that public hearings be held on the detailed routing of pipelines before Board approval of the plans, profiles, and books of reference of the detailed route.

- In a related action, on 18 December 1981, the Senate and House passed Bill C-87 which authorizes the Governor in Council to appoint up to six temporary Board Members at any time. This bill, which received royal assent on the same day it was passed by the House, is expected to be proclaimed at the same time as Bill C-60.

REVIEW OF THE YEAR

Supply and Demand

Domestic production of crude oil and equivalent hydrocarbons averaged 220 754 cubic metres per day in 1981, a decrease of 23 842 cubic metres per day or 9.7 percent from the 1980 level. The Alberta government cutback in crude oil production of 9 500 cubic metres per day in March, April and May and 19 000 cubic metres per day in June, July and August and the subsequent period of low demand for domestic crude contributed significantly to the production decrease.

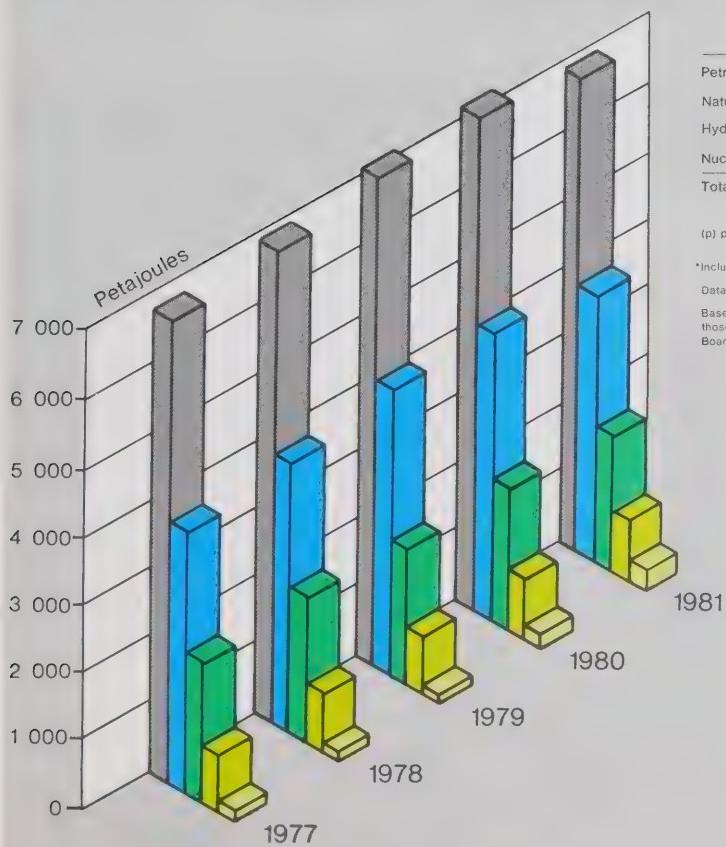
The output of synthetic oil decreased to an average of 17 500 cubic metres per day from the 1980 level of 20 300 cubic metres per day. A number of operating problems in both plants and an extended turnaround at the Suncor plant to accommodate changes for plant expansion contributed to the lower production levels.

Refiners processed 7.2 percent less crude in 1981, reflecting the lower demand by Canadian consumers for petroleum products. Direct exports of crude oil and equivalent were

15 798 cubic metres per day and exports under exchange arrangements amounted to 10 834 cubic metres per day. In addition, 14 836 cubic metres per day of refined petroleum products were exported in bulk, mainly to United States customers, and licensed exports of aviation and marine fuels used in international transportation amounted to 8 100 cubic metres per day.

Natural gas production in Canada decreased by 3.7 percent from 70 117 million cubic metres in 1980 to an estimated 67 496 million cubic metres in 1981. Net sales* of natural gas in Canada during 1981 increased by 336 million cubic metres from 1980 levels, an increase of about 1.0 percent. This increase was primarily due to conversion from oil to natural gas. Exports to the United States amounted to 21 584 million cubic metres or 32.0 percent of total production. The decrease in export volumes from 1980 levels was 4.3 percent. This decrease was primarily attributable to the slowdown in the United States economy, surpluses of alternative energy sources, and the availability of indigenous gas in United States markets at prices below the cost of Canadian gas. However, revenues for 1981 were 9.3 percent higher than the 1980 levels due to the increased export price of natural gas.

Canadian Consumption of Selected Energies



* Excludes other deliveries

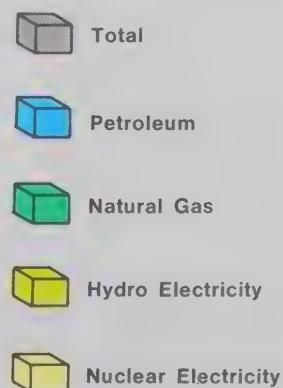
Figure 1

| | 1977 | 1978 | 1979 | 1980 ^(p) | 1981 ^(e) |
|---------------------|---------|---------|---------|---------------------|---------------------|
| Petroleum* | 3 913.2 | 3 998.6 | 4 156.6 | 4 164.4 | 3 903.9 |
| Natural Gas | 1 970.5 | 2 014.2 | 2 005.1 | 2 000.5 | 1 967.9 |
| Hydro Electricity | 736.8 | 779.2 | 775.6 | 812.3 | 839.2 |
| Nuclear Electricity | 89.5 | 106.0 | 119.8 | 129.2 | 132.8 |
| Total | 6 710.0 | 6 898.0 | 7 057.1 | 7 106.4 | 6 843.8 |

(p) preliminary (e) estimates

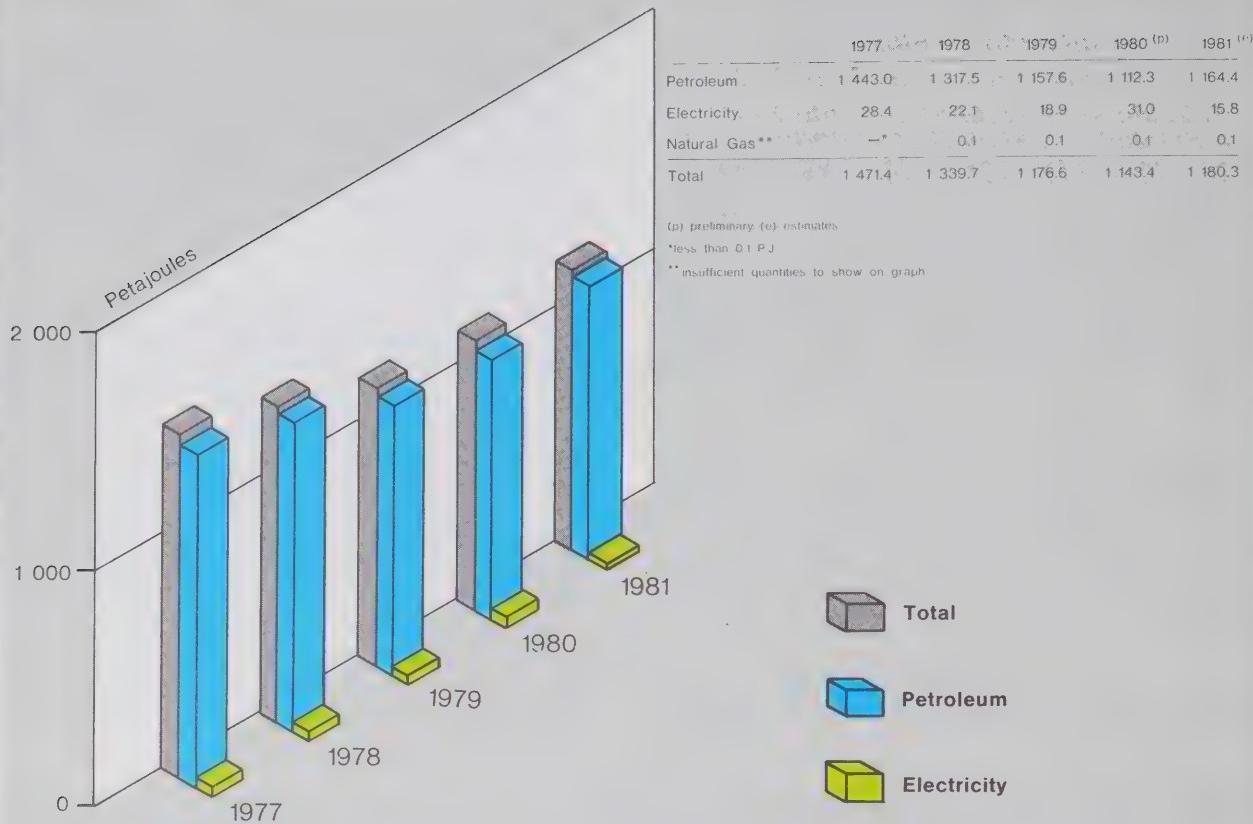
*Includes LPG's

Data on consumption of petroleum excluded 'non energy use' in previous annual reports. Based on Statistics Canada publication 45-004. These statistics are on a different basis than those in Statistics Canada publication 57-003 which is used in the preparation of forecasts for Board Energy Supply and Demand reports.



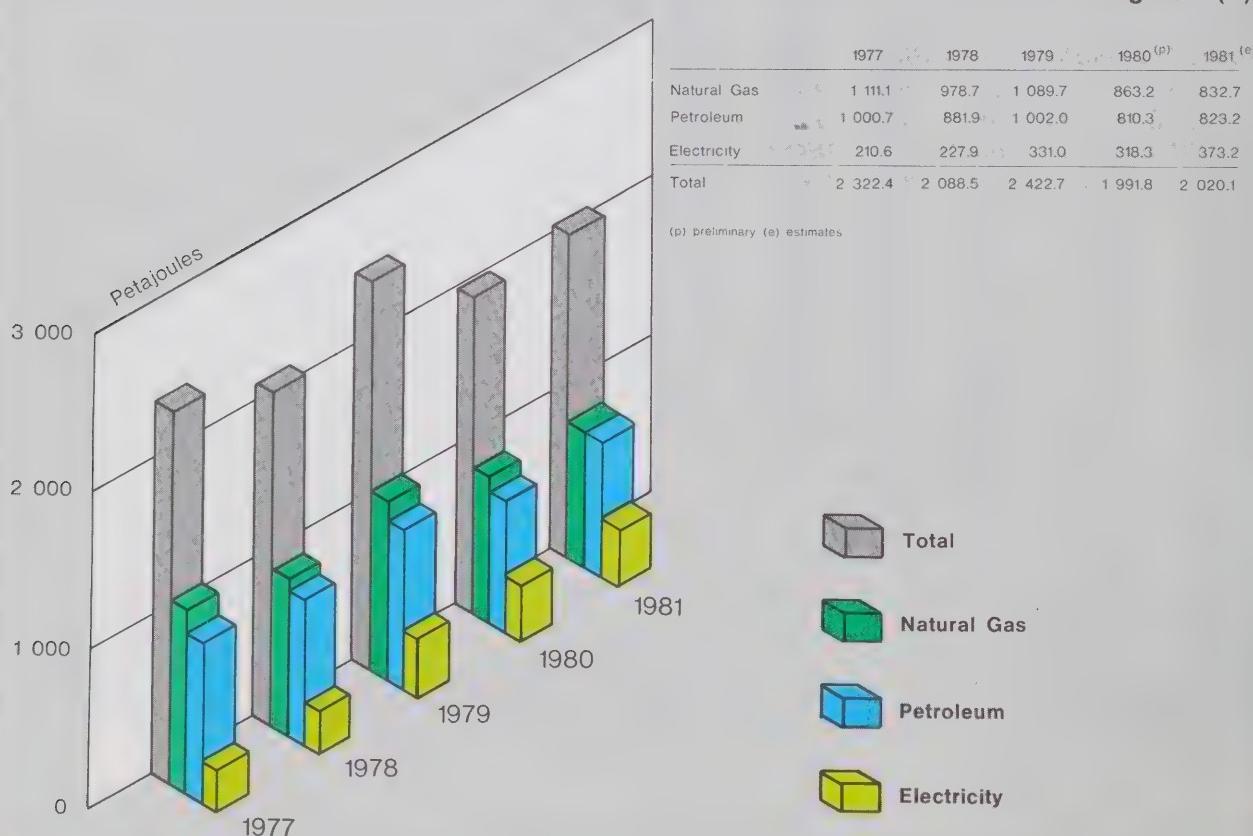
Imports of Petroleum, Natural Gas and Electricity

Figure 2(a)



Exports of Petroleum, Natural Gas and Electricity

Figure 2(b)



Canada's total net installed electrical generating capability at the end of 1981 is estimated at 81 000 gigawatts, up about four percent from 1980. Total Canadian consumption of electric energy in 1981 is estimated to have been 344 000 gigawatt hours, up less than 1.5 percent from 1980. Total exports of electric energy in 1981 were 35 372 gigawatt hours, an increase of 17.2 percent over the previous year.

Oil and Gas Reserves

The Board's estimate of remaining established reserves of conventional crude oil as of 31 December 1980 was 759.7 million cubic metres, or 47.8 million cubic metres lower than the 31 December 1979 estimate. Initial established reserves at 31 December 1980 were estimated at 2 314.3 million cubic metres, an increase of 27.5 million cubic metres from the final 31 December 1979 estimate of 2 286.8 million cubic metres. Production in 1980 was 75.3 million cubic metres.

The data in the paragraph above apply only to the conventional producing areas, since, at the end of 1980, the Board had not assigned established crude oil reserves to frontier regions. However, in the Board's June 1981 report, Canadian Energy Supply & Demand 1980-2000, established reserves of 50 million cubic metres were credited to the offshore Hibernia field, east of Newfoundland, based on the results of three successful oil wells drilled in the field at the time the estimate was made.

Estimated Established Reserves of Conventional Crude Oil—at 31 December 1980

| | (million cubic metres) | |
|-----------------------|-------------------------------|------------------|
| | Initial | Remaining |
| British Columbia | 77.9 | 25.5 |
| Alberta | 1 807.3 | 614.0 |
| Saskatchewan | 382.3 | 107.5 |
| Manitoba | 27.1 | 6.5 |
| Northwest Territories | 9.5 | 5.5 |
| Ontario | 9.7 | 0.7 |
| CANADA TOTAL | 2 314.3 | 759.7 |

Note: Propane, butanes and pentanes plus are not included.

The Board's estimate of remaining established reserves of marketable natural gas in the conventional producing areas as of 31 December 1980 is 76.4 exajoules, 0.6 exajoules higher than its 31 December 1979 estimate.

The estimate for frontier regions is 17.6 exajoules, an increase of 2.3 exajoules over the 31 December 1979 estimate. In frontier regions, the Board recognizes established reserves only in the Mackenzie Delta area, and in the Arctic Islands, at this time.

Figure 3(a)
Estimated Established Reserves of Conventional Crude Oil from Conventional Producing Areas

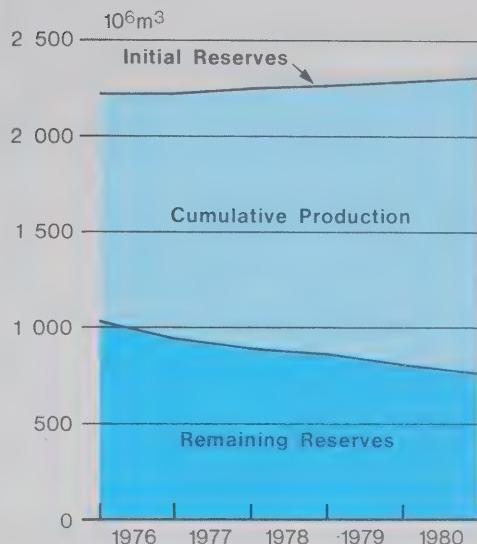
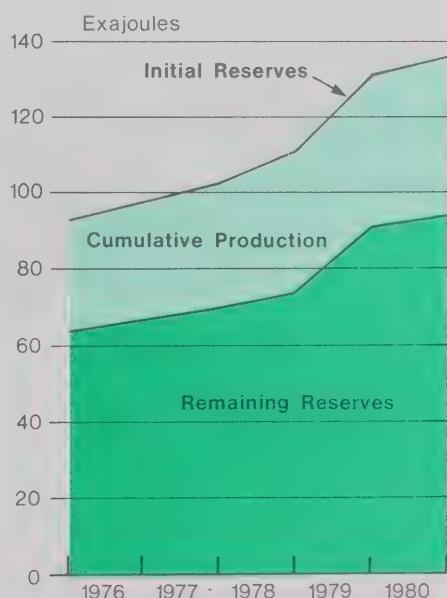


Figure 3(b)
Estimated Established Reserves of Marketable Natural Gas from Conventional Producing Areas



Net additions to initial established marketable reserves during 1980 were 5.7 exajoules. Increases of 2.8 exajoules in Alberta, 0.7 exajoules in British Columbia, 0.1 exajoules in the Southern Territories and 2.3 exajoules in the Arctic Islands were recorded. Saskatchewan experienced a decline in initial reserves of 0.2 exajoules, reflecting a negative adjustment for natural gas used in field operations.

**Estimated Established Reserves of Natural Gas
at 31 December 1980**

| | (Exajoules) | |
|--|--------------------|------------------|
| | Initial | Remaining |
| British Columbia | 14.2 | 8.5 |
| Alberta | 101.2 | 66.0 |
| Saskatchewan | 2.2 | 1.2 |
| Southern Yukon and Northwest Territories | 0.6 | 0.4 |
| Ontario and other eastern producing areas | 1.1 | 0.3 |
| TOTAL MARKETABLE RESERVES | 119.3 | 76.4 |
| Mackenzie Delta | 5.6 | 5.6 |
| Arctic Islands | <u>12.0</u> | <u>12.0</u> |
| CANADA TOTAL | 136.9 | 94.0 |

EXPLORATION AND DEVELOPMENT ACTIVITIES — OIL AND NATURAL GAS

The Canadian drilling industry experienced a decrease in the number of wells drilled compared with the previous year. Preliminary estimates show that 7 200 wells were drilled in Canada during 1981, a 22 percent decrease from the 9 200 wells drilled in 1980, and 7 percent fewer than the 7 750 wells drilled in 1979.

A total of 5 850 wells were drilled in Alberta in 1981, 1 400 fewer than in 1980. In British Columbia 210 wells were drilled, compared with 350 in 1980, and in Saskatchewan the total was 840 wells compared with 1 570 in the previous year. Manitoba was the only western province to show an increase in drilling activity in 1981, with 69 wells compared with 27 in 1980.

In the Territories mainland, the Beaufort Sea, the Arctic Islands, and in waters off the Atlantic coast, 21 wells were completed, compared with 26 wells in 1980, and 34 wells in 1979.

The number of drilling rigs available in Canada decreased from an all time high of 602 in October 1980 to 453 in December 1981. Utilization of drilling rigs also decreased, from 78 percent in 1980 to 59 percent in 1981. Approximately 200 drilling rigs, including 34 rigs assembled in Canada, were moved out of Canada during the year.

There were 73 geophysical crews active in Canada at year-end, compared with 96 a year earlier. In general, 1981 geophysical programs were less extensive than those carried out in 1980.

The following is a summary of significant activity during 1981. (Locations are identified on the accompanying map).

Alberta

Although drilling activity in Alberta during 1981 was reduced substantially from the previous year, a significant amount of drilling took place throughout the province. The Shekilie-Zama-Amigo area (1) in the extreme northwestern part of Alberta, where the objective was oil and gas in Devonian pinnacle reefs, was very active, as was the Golden-Lubicon-Evi-Slave area (2) in the north-central sector where exploration was directed toward oil objectives in the Slave Point and Gilwood formations. Gas discoveries and/or field extensions were made in the Berland River, Simonette, Robb, Westerose, Ricinus West, Elmworth (3), Pageant, and Therien areas. The Edson Cardium oil trend (4), discovered in 1963, 1.5 to 4 kilometres wide, has now been extended over a distance of some 70 kilometres. Although activity in the West Pembina area (5) was reduced during 1981, industry continued its search for Nisku pinnacle reefs in this and other

prospective areas. The heavy oil area near Hayter (6), 75 kilometres south of Lloydminster, experienced considerable drilling during 1981.

Two areas very active during 1980, the Deep Basin area of west-central Alberta and Nanton-Claresholm area in southwestern Alberta, experienced a much reduced pace of activity during 1981.

British Columbia

Gas discoveries and/or field extensions were made in the Grizzly (7) and the Petitot-Helmet-July (8) areas, while oil discoveries and/or field extensions were made in the Fireweed and Eagle areas (9). Three dry holes were drilled in the Nechako Basin (10), in the central part of the province.

Saskatchewan

As in 1980, drilling activity was concentrated in the heavy oil belt in the west-central portion (11) of the province. Oil discoveries and/or field extensions were reported in the Estevan-Steelman (12) and Eastend-Whitemud (13) areas.

Manitoba

Oil discoveries were made in the Virden and Pierson areas (14), as a result of the increased level of drilling activity in the province.

Yukon and Northwest Territories Mainland

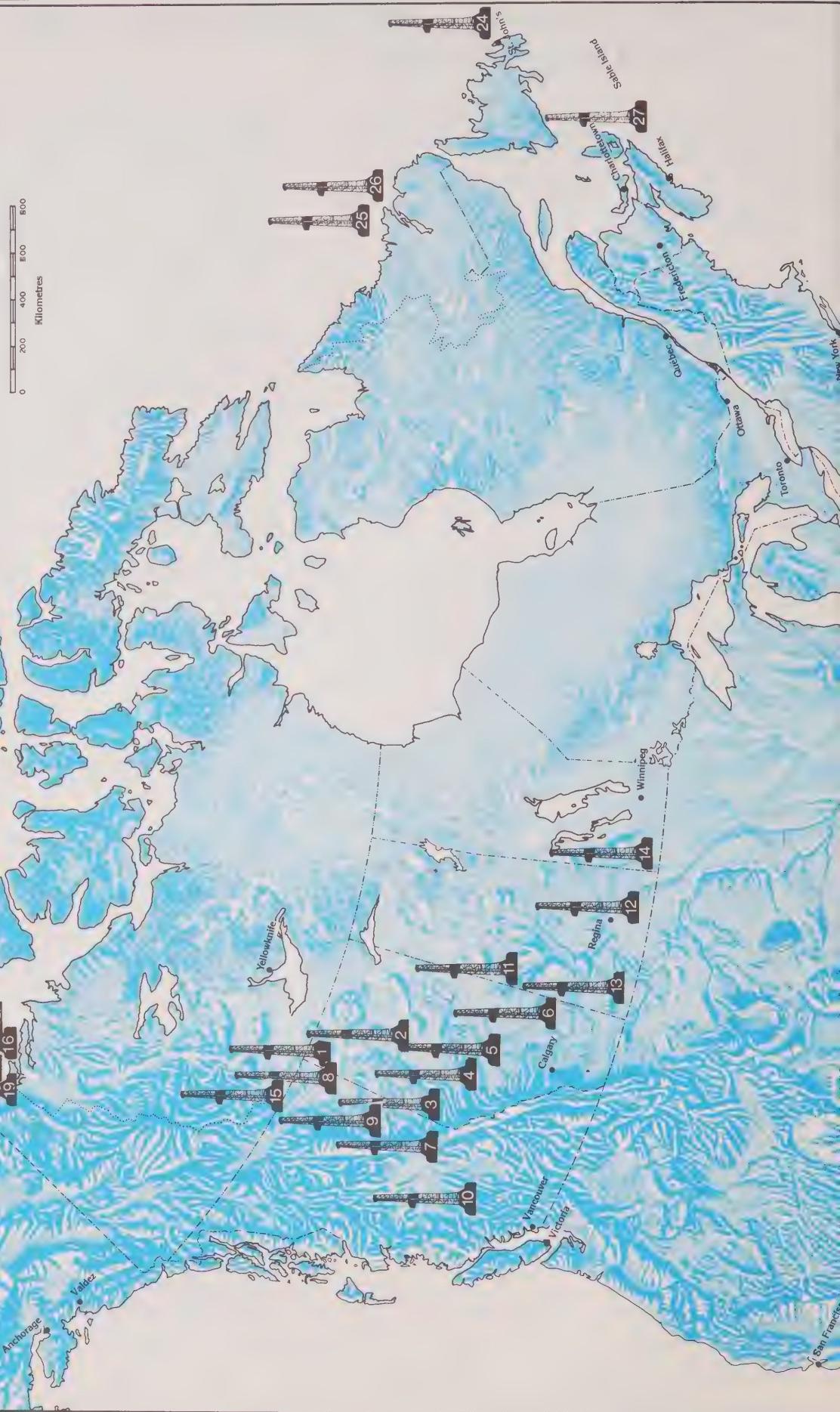
Two wells were completed during 1981, compared with nine in 1980. The two wells, Paramount HB et al Cameron J-76 and the Sulpetro et al Trout Lake P-34, located in the extreme southwestern part of the Northwest Territories, were non-productive. In the same area, Paramount et al Big Island E-54 (15) was being drilled at year-end.

Mackenzie Delta-Beaufort Sea

Considerable encouragement resulted from drilling operations in the Mackenzie Delta-Beaufort Sea area during 1981. Three wells encountered oil, namely, Esso Gulf Issungnak 2 O-61 (16), 1.5 kilometres north of the Issungnak O-16 1980 oil and gas discovery; Dome Gulf Hunt Kopanoar 2 I-44 (17), 4 kilometres northwest of the Kopanoar M-13 1979 oil and gas discovery, and Dome Hunt Gulf Koakoak O-22 (18), 37 kilometres east of Kopanoar. Issungnak 2 O-61 flowed oil and gas on several tests from net pay sections reported to be 20 metres for oil and 85 metres for gas. At Kopanoar 2 I-

Figure 4

Oil and Gas Developments



44, flow rates up to approximately 200 cubic metres per day of oil and 65 000 cubic metres per day of gas were obtained, and at Koakoak O-22, up to approximately 450 cubic metres per day of oil and 490 thousand cubic metres per day of gas.

Two wells completed in 1981 were dry and abandoned. Operations were suspended at the end of the drilling season at three others, and will resume in 1982. At year-end the Gulf et al East Tarsiut N-44 (19) well, located approximately 6 kilometres east of the Tarsiut A-25 1980 oil discovery, was drilling.

Beaufort Sea exploration is still at a very early stage, and until considerably more drilling takes place, including the drilling of delineation wells in pools discovered to date, the potential of the region will remain speculative.

Arctic Islands

This was a very encouraging year for operators in the Arctic Islands, as oil was encountered at three offshore wells. Heretofore, the region had been considered by most prospectors primarily for gas.

The wells are Panarctic et al Cisco B-66 (20), Panarctic et al Skate B-80 (21), and Panarctic et al Maclean I-72 (21). Cisco B-66 flowed oil on test at a maximum rate of 132 cubic metres per day with gas at 247 thousand cubic metres per day and Skate B-80 at 123 cubic metres per day with gas at 160 thousand cubic metres per day. While oil did not flow from the Maclean I-72 well, a small amount was recovered after the test was completed.

Further drilling will be necessary before the commercial significance of these discoveries can be assessed.

Two wells drilled during the year were dry and abandoned. One, Chevron et al Muskox D-87 (22), was drilling at year-end.

East Coast Offshore

During 1981, in waters off the East Coast, nine wells were completed, three wells were suspended, and four wells were still active at year-end. Delineation drilling in the Hibernia field, east of Newfoundland, continued during the year. The field now has four oil wells, and one well was being drilled at year-end. One delineation well, drilled in 1981, was non-productive. Net pays in the field are substantial and oil flow rates up to 700 cubic metres per day were obtained on test. While there is as yet insufficient well control in the field to permit a full assessment of established reserves, it does not appear unreasonable to anticipate recoverable quantities of at least 150 million cubic metres.

Drilling elsewhere in the Hibernia area during the year failed to find oil in quantities deemed commercial. However, results were very encouraging and prospects for the occurrence of exploitable reservoirs in addition to those in the Hibernia field appear good.

Off the Labrador coast, Total Eastcan et al Bjarni O-82 (25), a step-out to the Bjarni H-81 1973 gas-condensate discovery, also encountered gas with condensate. The well flowed gas on test at a rate in excess of 700 thousand cubic metres per day. Petro-Canada et al North Leif I-05 (26), located 48 km southeast of the 1974 Gudrid H-55 gas-condensate discovery well, recorded the first occurrence of free oil, albeit non-commercial, off Labrador. On test, the well yielded a few cubic metres of waxy oil.

Petro-Canada et al North Bjarni F-06, located approximately 10 kilometres northwest of the Bjarni O-82 discovery, has been reported as a gas discovery. This well will be re-entered during the 1982 drilling season.

The only well completed on the Scotian Shelf in 1981 was Mobil Texaco PEX Venture B-13 (27), east of Sable Island, the first delineation well to the 1979 Venture D-23 gas-condensate discovery. Venture B-13 also encountered gas-condensate reservoirs. A second delineation well, Mobil Texaco PEX Venture B-43, was being drilled at year-end.

OPERATIONS REVIEW

OIL AND PETROLEUM PRODUCTS

The most striking feature of the international oil market of 1981 was the steep decline in demand for oil by the industrialized countries, including Canada. This was in part attributable to the general weakness of the world economy, but it was equally, if not more, a result of widespread conservation efforts undertaken in response to the sharp increases in oil prices on various occasions during the 1970's. With the weak demand and with a generalized drawdown of inventories, there was a dramatic decline in the world's demand for crude oil. It was especially apparent in the case of the OPEC group of countries, whose crude production reportedly fell at one point to less than 3.2 million cubic metres per day from a peak early in 1980 of 4.5 million cubic metres per day. Potential world production remained plentiful but demand continued to be weak; the effect was to halt the decade-long rise in world oil prices.

The domestic oil scene in 1981 was dominated by the Alberta government policy to undertake a three-staged cutback in provincial production of crude oil to emphasize its opposition to the National Energy Program. The cutbacks

occurred, however, at a time when offshore crude oil supplies were becoming easier to obtain and consequently, although they affected refinery operations, there was little impact on petroleum product supply. The first reduction of 9 500 cubic metres per day was scheduled to take effect on 1 March with an additional 9 500 cubic metres per day on 1 July. The third cutback of a further 9 500 cubic metres per day which was planned for 1 September did not occur because a new oil agreement was reached between the federal and Alberta governments. During 1981, deliveries of domestic crude oil to refineries in Canada declined by 11.8 percent below 1980 levels, while imports rose by 2.8 percent. However, imports from traditional sources decreased during 1981 because of the purchases of increased volumes of Mexican crude which reached a level of 8 866 cubic metres per day.

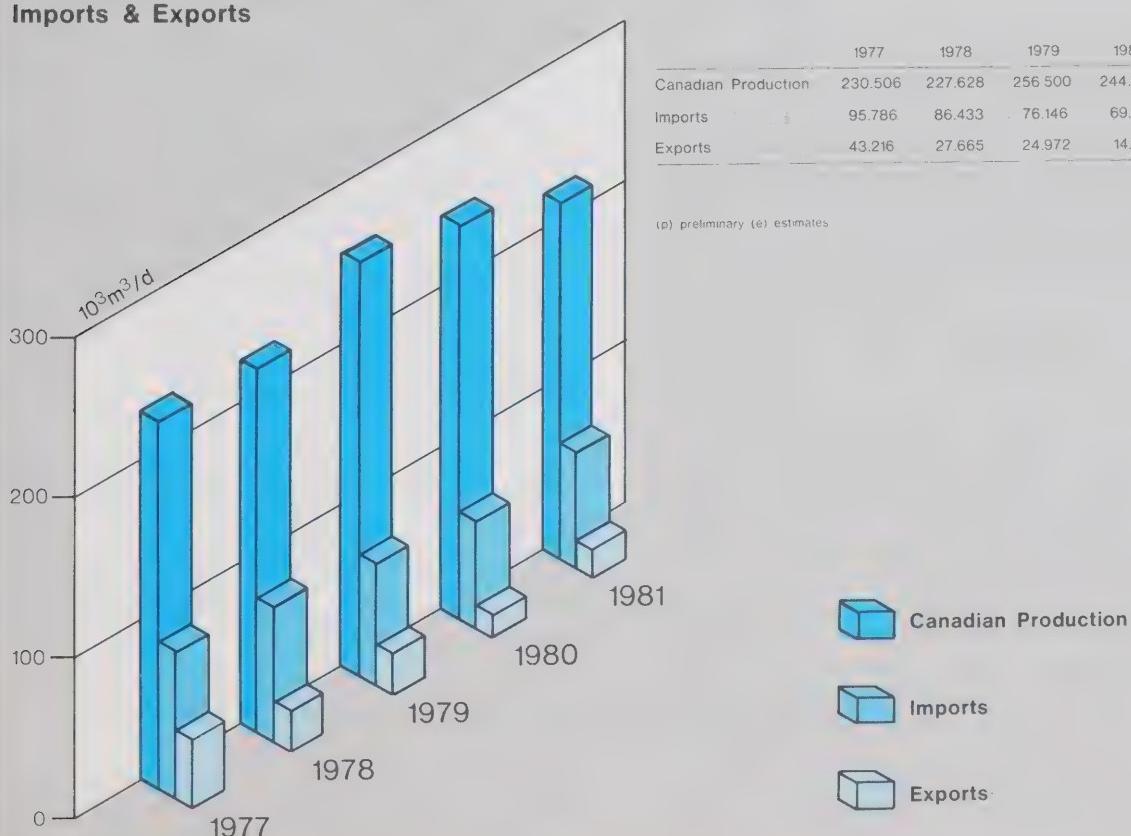
Canadian demand for main petroleum products (gasoline, middle distillates, heavy fuel oil) was down in each product category. The total decline from the 1980 level approached 6.0 percent with middle distillates and heavy fuel oil showing the greatest decrease, 7.2 percent and 12.8 percent respectively. The decline in demand occurred primarily in areas east of the Prairies, falling by about 8.1 percent to 151 800 cubic metres per day. In British Columbia and the Prairies demand

Crude Oil and Equivalent Hydrocarbons Production, Imports & Exports

Figure 5

| | 1977 | 1978 | 1979 | 1980 ^(p) | 1981 ^(e) |
|---------------------|---------|---------|---------|---------------------|---------------------|
| Canadian Production | 230.506 | 227.628 | 256.500 | 244.596 | 220.754 |
| Imports | 95.786 | 86.433 | 76.146 | 69.629 | 71.484 |
| Exports | 43.216 | 27.665 | 24.972 | 14.834 | 15.798 |

(p) preliminary (e) estimates



for main products decreased by 0.8 percent to 65 500 cubic metres per day. Refinery crude runs in Canada for the year, declined by about 7.2 percent to 282 400 cubic metres per day. In Quebec and the Atlantic Provinces, refinery runs averaged 110 300 cubic metres per day compared with 123 200 cubic metres per day in 1980. West of Quebec, refinery runs were 172 100 cubic metres per day in 1981, compared to 181 100 cubic metres per day in 1980.

The Board continued to monitor, on a monthly basis, the supply and demand outlook for petroleum in Canada and provided federal and provincial officials and industry representatives with an overview of the supply/demand balance.

Domestic prices increased by \$6.30 per cubic metre on each of 1 January and 1 July. The Memorandum of Agreement between the Government of Canada and the Government of Alberta on energy pricing and taxation provided for a further increase of \$15.75 per cubic metre in the average Alberta field price of conventional oil effective 1 October 1981. Subsequent agreements with other producing provinces led to field prices for the remaining crudes modelled on the prices established for Alberta crude oils.

Crude Oil Allocation, Exports and Exchanges

Allocation procedures, amended to take account of the Alberta cutbacks, were used by the Board to allocate crude oil volumes among Ontario and Quebec refineries in months when total nominations exceeded supply. After making allowance for British Columbia and Prairies requirements and exports of heavy crude oil, the Board allocated the remaining domestic crude oil and equivalent to Ontario and Quebec refineries. Allocation was based on historical runs of crude oil in the refineries affected, after allowing for processing arrangements by some small independent oil companies and was controlled by the issuance of licences to export domestic oil through Gretna, Manitoba for return to Canada at Sarnia via the Lakehead and Interprovincial Pipe Lines.

In 1981, the Board modified its procedures with regard to resellers in Ontario to accord them the same treatment as independents in Montreal, where all applicants for licences to bring domestic crude to Eastern Canada are required to justify the volume requested. With an adequate supply of oil products generally available in the market, a number of resellers did not take up the full allocation of domestic crude oil issued to them by the Board. While the Board believes that the approach used to allocate domestic crude oil to independents must remain flexible, the Board has cautioned companies which have reduced or terminated the use of domestic crude oil, that any future applications seeking to restore previous levels of allocation would have to be considered in the light of the circumstances prevailing at the time.

Exports of domestic light crude oil to refiners in the United States were limited to the small quantities that could not be disposed of in Canada but substantial volumes of surplus heavy crude oil continued to be exported to refiners in the Northern Tier States (see Appendix O-III). The expiration of the allocation program administered by the United States Department of Energy prompted a change in the procedures by which exports of heavy crude oil were licensed by the Board. The Board dispensed with the principle of priority status and allocated on an historical basis. Despite the falling demand for products in United States markets, the consequent reduction in refinery runs, and the increasing availability of light crude oil on world markets, exports of Canadian heavy crude oil were maintained at the 1980 level of about 15 000 cubic metres per day.

The reduced demand for crude oil by United States refiners brought about some reduction in the volumes being exported under "mid-continent exchanges" (see Appendix O-V). The 1981 average of 9 778 cubic metres per day was about 30 percent less than in 1980. As shown in Appendix O-VI "Eastern Canadian" exchange licences were issued for only one exporter and averaged 1 055 cubic metres per day.

Licensed bulk exports of refined petroleum products were 14 836 cubic metres per day or about 10 percent lower than the average for 1980 (see Appendix O-VII). Effective 1 May 1981, export licensing was extended to marine and aviation fuel acquired in Canada and consumed in international transportation. In addition, such fuels became subject to transportation fuel compensation recovery charges under a program administered by the Board. These measures were instituted by the Government to ensure that marine and aviation fuels consumed in international transportation would not be sold at the subsidized price paid by consumers in Canada. During the May to December 1981 period about 8 100 cubic metres per day of marine and aviation fuels were exported under licences issued by the Board. (See Appendix O-VIII)

NATURAL GAS AND GAS PRODUCTS

A high level of natural gas production by the Canadian natural gas industry of 1979 and 1980 was slightly tempered in 1981. Net sales of natural gas in Canada during 1981 increased slightly, however exports to the United States decreased by 4.3 percent from 1980 levels. Production in British Columbia was reduced by 6.0 percent. However, Alberta was able to maintain its 1980 production level.

Natural Gas Production and Consumption

In 1981 production of marketable natural gas decreased by 2 621 million cubic metres*, from the 1980 levels, a decrease of 3.7 percent. Net sales** of natural gas in Canada during

* Preliminary

** Excludes other deliveries

1981 increased by 336 million cubic metres, an increase of about 1.0 percent, reflecting the continued connection of new customers and conversion from oil to natural gas. Natural gas consumption in the residential sector increased by 3.7 percent. In the industrial sector, which accounted for 53 percent of the total net sales in Canada, natural gas consumption increased by 0.8 percent over the previous year. The commercial sector registered an increase of 1.5 percent.

Domestic Natural Gas Pricing

The Petroleum Administration Act (PAA) was enacted in 1975, assigning responsibility for the administration of domestic natural gas pricing to the Board. Part III of the PAA provides the Government with authority to achieve a uniform price, exclusive of transportation and service costs, for natural gas sold within Canada but outside of the province of its production. The PAA provides the Government with a mechanism which enables it to maintain a balanced relationship between the prices of natural gas and petroleum products sold in Canada. Also, the Act helps to achieve a balance between the interests of consumers and producers in Canada, while encouraging the development and production of natural gas.

Under Section 50 of the Act, the Minister of Energy, Mines and Resources may enter into an agreement with the government of a producing province to establish prices for natural gas produced in that province for sale outside that province.

The National Energy Program which was announced in October 1980 provided for an increase in the price of natural gas of 42 cents per gigajoule per year for three years starting 1 November 1980.

In April 1981 the Minister issued a policy statement on domestic natural gas pricing which provided guidelines based on the National Energy Program (NEP) for the pricing of domestic natural gas for all markets east of Alberta. A significant feature of the statement was that the existing Trans-Canada eastern zone would be extended to Quebec and the Maritime Provinces, with the result that gas prices east of Toronto would be the same as the Toronto city gate price for the same types of service.

In May the Minister requested the Board to inquire into and report on the necessity for developmental prices and other matters relevant to the pricing of natural gas in the domestic market. As a result, the Board conducted a pricing inquiry under subsection 22(2) of the Act from 18 August to 2 September 1981. The scope of the inquiry included the effect of developmental pricing on domestic gas sales and alternatives for setting pricing differentials between zones and classes of service in existing franchised areas. The report on the inquiry was submitted to the Minister on 26 November 1981.

In the absence of an agreement with the Province of Alberta, after the announcement of the NEP, from 1 November 1980 to 31 October 1981, the federal Government unilaterally prescribed the pricing for natural gas entering interprovincial and international trade, under section 52 of the PAA. On 1 November 1981 a new Federal/Alberta agreement came into effect which established new natural gas prices increasing at 46.6 cents per gigajoule per year until 31 January 1987.

During 1981 under the authority of Part III of the PAA, Domestic Gas Price Restraint, the Board prepared the Natural Gas Prices Regulations 1981 and four amendments to the Natural Gas Prices Regulations, for the approval of the Governor in Council and 37 special and general orders. The prices established as a result of these new regulations and orders reflected changes in the price of Alberta-produced natural gas in Canada, outside Alberta. Natural Gas Export Price

Section 14 (formerly section 11A) of the National Energy Board Part VI Regulations requires the Board to maintain surveillance of natural gas export selling prices and report its findings and recommendations to the Governor in Council when, in the opinion of the Board, there has been a significant increase in prices for competing energy supplies in the export market.

In its first report in July 1974, the Board enunciated, *inter alia*, its principal recommendation that Canadian natural gas, as a scarce non-renewable resource, should be priced on the basis of its fair market value as a commodity in international trade. The Board's subsequent recommendations in 1975, 1976 and 1977 indicated a gradual shift in emphasis from commodity value to replacement cost as the main criteria in determining the appropriate export price for natural gas exports.

In January 1981, the Board recommended that the export price be raised from \$4.17 to \$4.60 per gigajoule effective 1 April 1981. The major factor behind the Board's decision was the continued escalation in OPEC crude oil prices. However, in the light of the United States economic slowdown, and the availability of supplies of residual fuel oil and lower priced indigenous gas, the Board did not recommend further price increases during the remainder of the year. The Board anticipates no significant changes in the United States energy market for the coming year.

Natural Gas Exports

During 1981 net exports of natural gas to the United States totalled 21 584 million cubic metres. This quantity was 4.3 percent less than deliveries made during the previous year.

Revenues for 1981 were some 9.3 percent higher than 1980 levels due to the higher export price.

During 1981 the Board issued one new LNG order and amended a number of existing licences. Appendices G-II and G-III provide the details. Exports of natural gas under each licence and order in 1981 are tabulated in Appendix G-V.

Ethylene

Dow Chemical of Canada Ltd. was issued an order for the exportation of nine million kilograms of ethylene via truck from Sarnia, Ontario for the period 1 January 1982 to 31 December 1982.

Ethane

Dome Petroleum Limited was issued an order for the exportation of 160 thousand cubic metres of ethane via pipeline for the period 1 March 1981 to 31 December 1981.

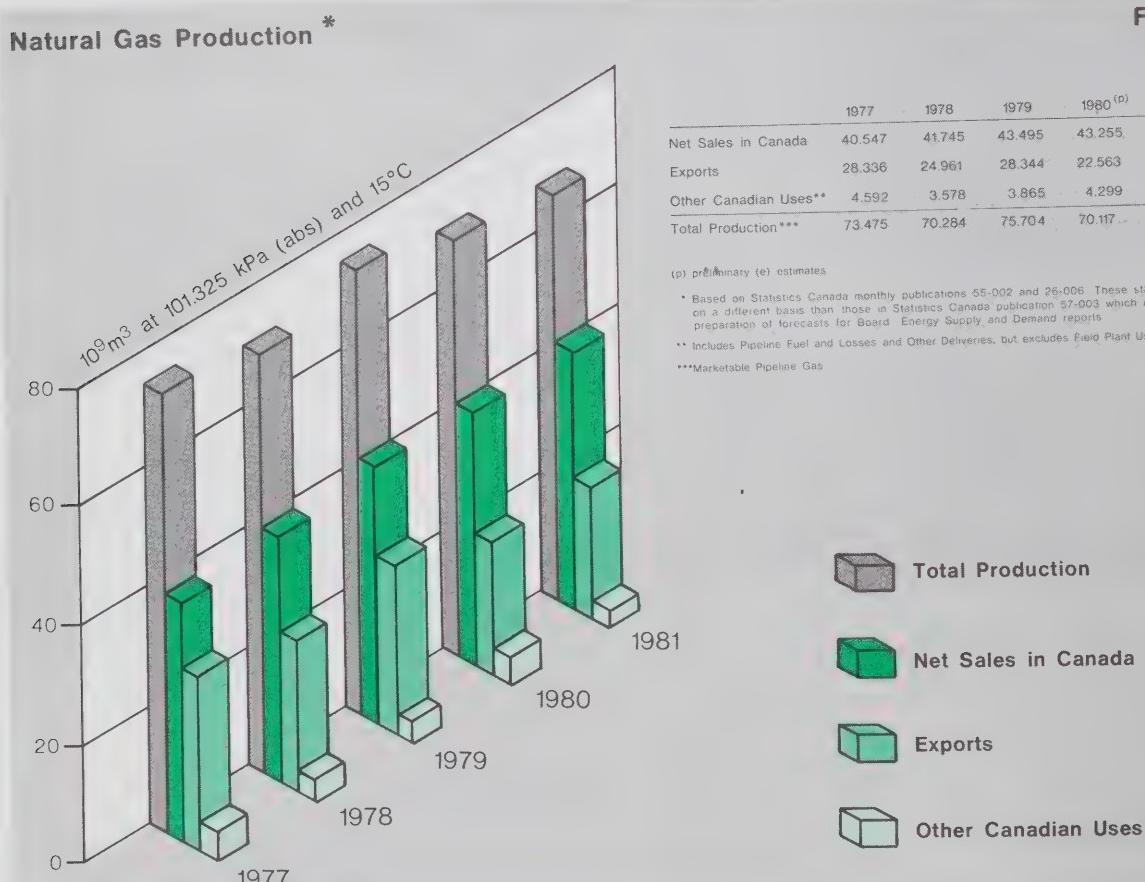
Export Control of Propane and Butanes

The Board continued in 1981 to allocate the production of propane and butanes to ensure that domestic demand was met and the remainder made available for export, and to set minimum export prices f.o.b. Alberta. The Board estimated that during the period from 1 April 1981 to 31 March 1982, the total net Canadian production of propane and butanes would be 7.1 million cubic metres, and butanes 4.4 million cubic metres.

Canadian requirements for propane were estimated to be 3.3 million cubic metres, while Canadian requirements for butanes were estimated to be 1.7 million cubic metres for the same period. In its calculation of domestic demand for propane, the Board included a contingency volume to accommodate an expected increase in the use of propane as a motor fuel.

For the year 1981, the estimated total volume of propane exported from Canada was 3.5 million cubic metres or

Figure 6



approximately 50 percent of the estimated total net Canadian production. For butanes, the estimated total volume exported in 1981 was 2.5 million cubic metres or approximately 58 percent of the estimated Canadian production. The majority of Canadian exports were delivered to United States markets, however, about 12.0 percent of propane exports was to other countries, primarily Japan. The underground inventory of propane during 1981 ranged from a low of 742 thousand cubic metres to a maximum of 1 690 thousand cubic metres. The inventory for butanes varied from 477 thousand cubic metres to 797 thousand cubic metres. The Board's minimum export prices for these products, normally established monthly, ranged from 10.0 to 10.5 cents per litre for propane, and from 12.0 to 12.5 cents per litre for butanes f.o.b. Edmonton, Alberta.

Pipeline Activities

Oil Product and High Vapour Pressure Pipelines

One of the Board's major pipeline activities involves a detailed review of company applications for authorization to

change or add to existing pipeline facilities. In 1981 a total of seventeen applications were reviewed to ensure that safety, environmental, economic and regulatory requirements were satisfied. Appendices O-I and O-II list the related Board Orders issued and the estimated costs of the new pipeline facilities.

Also in 1981, a number of companies applied for "Leave to Open" for recently constructed facilities. The reviews involved analyses of hydrostatic test results and operating parameters of the pipelines to ensure safe operation before permitting the coming on stream of facilities for the transmission of hydrocarbons. Among those granted "Leave to Open" were the new condensate facilities at Manito's Kerrobert Station; TNPL Inc's Ottawa, Ontario lateral and its new pumping facilities at Clarkson Station and Port Credit, Ontario; Interprovincial Pipe Line's pumping facilities at Milden Creek and White City Saskatchewan and its metering facilities at Hardisty, Alberta and Kerrobert, Saskatchewan.

Because of the increasing development of northern reserves, research into northern pipeline technology has been given priority in 1981. Various thermal-modelling techniques,

Causes of Pipeline Incidents

Figure 7

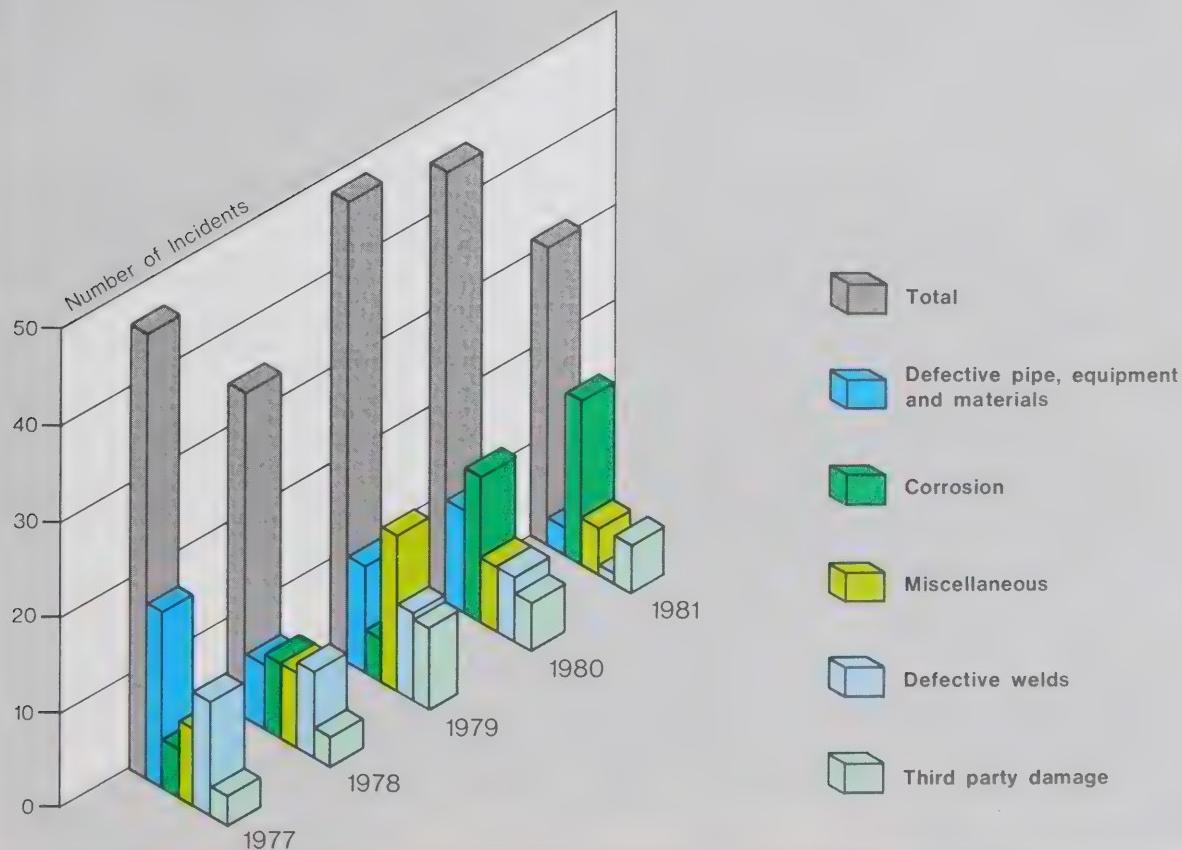


Figure 8

Oil & Product Pipeline Companies Under N.E.B. Jurisdiction

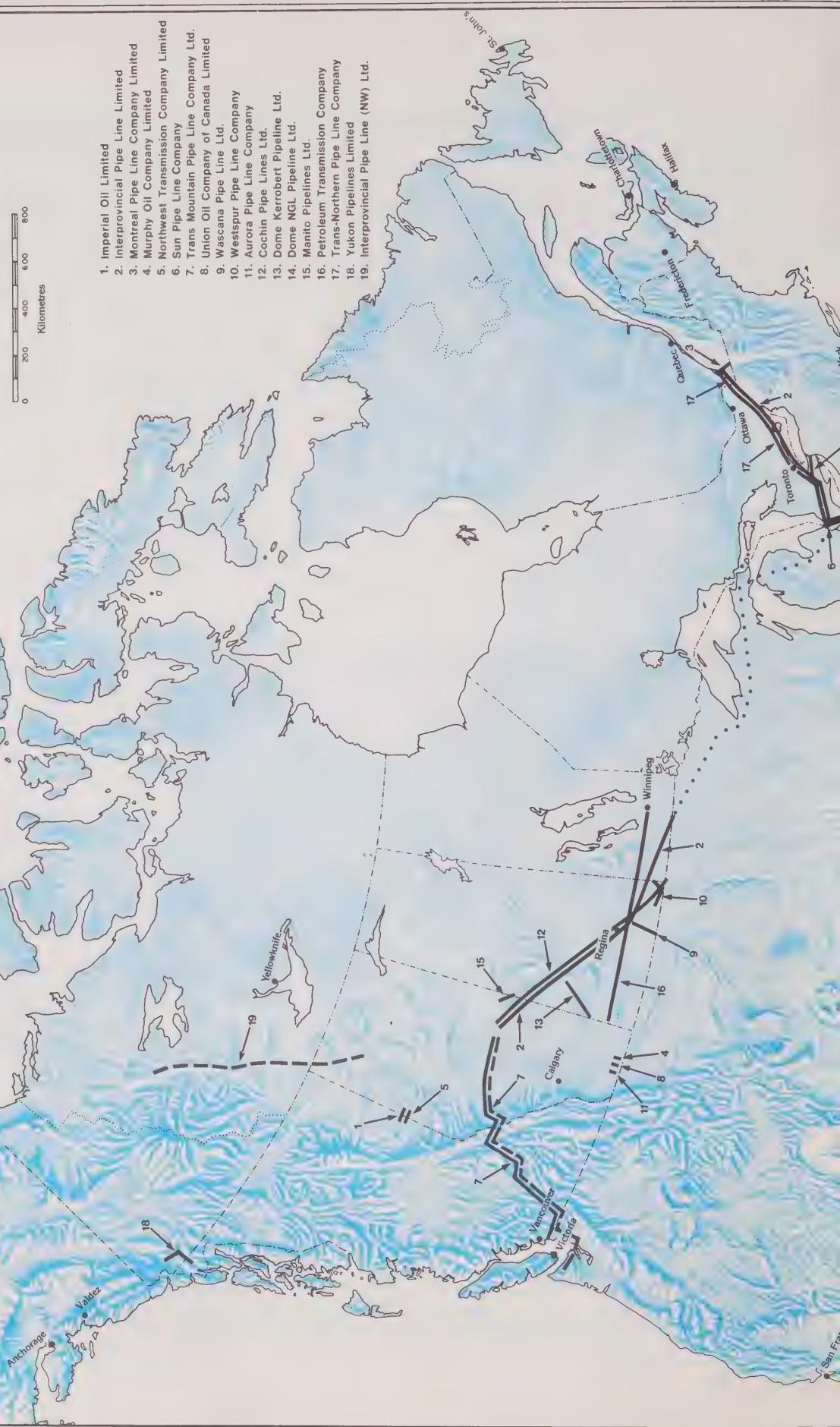
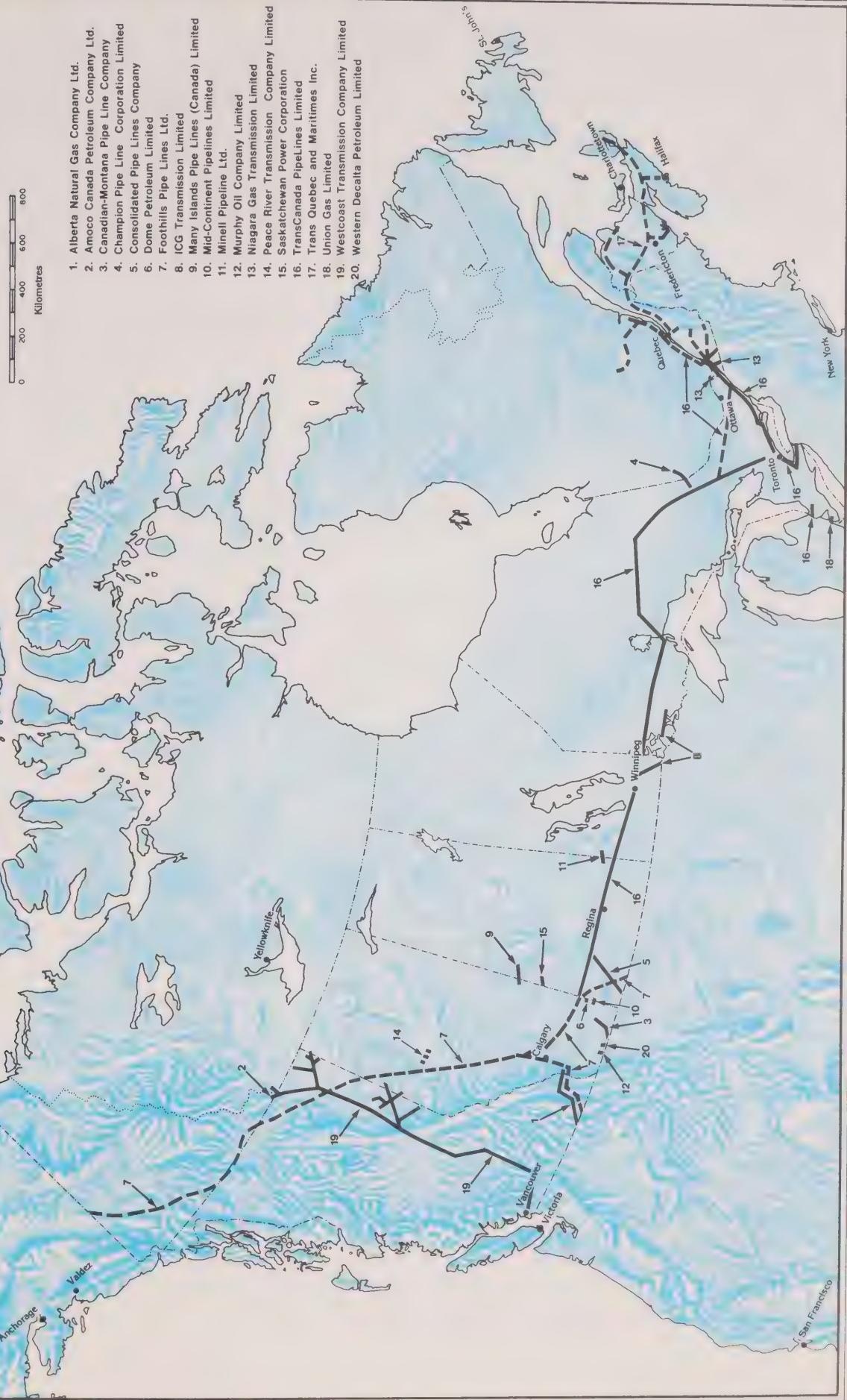


Figure 9

Gas Pipeline Companies Under N.E.B. Jurisdiction



designed to simulate the impact of a pipeline on permafrost, are being assessed. Similarly, geothermal records, pipeline construction practices in permafrost, and pipeline thermal control concepts are a few of the facets under investigation.

The Board is continuously updating its engineering standards. Improvements in pipe steels, welding procedures, and construction techniques have led to increased use of uncased pipeline design at highway crossings. In response to this new design concept the Board conducted an analysis of loads and induced stresses imparted to uncased pipelines at road crossings with the objective of formulating adequate design guidelines. Such guidelines and procedures were established and were communicated to the various pipeline companies under the Board's jurisdiction early in 1981.

Natural Gas Pipelines

The extension of natural gas service eastward through Quebec and the Maritimes continued to figure prominently in the Board's activities during 1981.

Appendices G-I and G-II list the new certificates of public convenience and necessity and related orders which were issued during the year.

West of the Province of Quebec, the Board heard an application by TransCanada to increase the capacity of the Company's system in 1981. The approval in 1980 of a large portion of the GC-66 looping and compression facilities was made conditional on authorization of gas imports by the United States regulatory authorities. Early in 1981 these necessary authorizations had not been obtained. However, during the 1981 "Upstream Facilities" hearing TransCanada demonstrated to the Board that, in addition to the other looping and compression facilities included in its application, the facilities conditionally approved in 1980 were now required to provide for the 1981/1982 growth in domestic demand. In addition it was noted that these facilities would provide TransCanada with a level of excess capability which would enable the Company to meet its transportation obligations should the required United States gas import regulatory authorizations be forthcoming. The Board ruled in favour of these points and as a result amended Certificate GC-66 to remove the condition relating to United States regulatory authorizations and approved the balance of the facilities in Certificate GC-67. By year end all of the United States gas import authorizations had been received and construction of all these facilities was nearing completion. TransCanada also cited additional growth in domestic demand in applying for a further 291.2 kilometres of upstream looping in 1982 and for authority to build a pipeline between North Bay and Morrisburg in Ontario* which TransCanada held to be the most economical way to supply the markets being developed in Quebec and the Maritimes. The Board will conduct a hearing in February 1982 for the 291.2 kilometre looping application.

* A decision approving the application for the North Bay to Morrisburg pipeline was released by the Board in January 1982.

On the subject of processing of natural gas, the Board granted a leave to open for Westcoast Transmission Company Limited's expansion of their Taylor Sulphur Recovery Plant and approved an application by that Company for major additions to its Fort Nelson Sulphur Plant. The Board approved the replacement of four turbine units elsewhere on the Westcoast system, agreeing that replacement was justified by fuel efficiency and improved operating performance. Installation was nearing completion at year end. The Board also approved leave to open applications for each of Westcoast's Red Creek Pipeline Extension and Stoddart Compressor Station Addition projects.

Alaska Highway Gas Pipeline

The Alaska Highway Gas Pipeline is a multi-billion dollar project aimed at transporting natural gas from Prudhoe Bay to Western and Midwestern markets in the United States. The construction of the Canadian section is programmed to be built in two phases. Phase I, or the "prebuild", is composed of a western leg consisting of 213 kilometres of 914 millimetre diameter pipe from Caroline, Alberta to Kingsgate, British Columbia, and an eastern leg which consists of 636 kilometres of 1066 millimetre diameter pipe from Caroline, Alberta to Monchy, Saskatchewan. Phase II will involve the construction of a 1422 millimetre diameter pipeline from the Alaska/Yukon border to Caroline, Alberta.

Although the construction of the pipeline in Canada is regulated by the Northern Pipeline Agency in Calgary, the Board is providing assistance to the Agency, and is responsible for the financial aspects, tariffs and certain engineering matters.

In 1981 construction of the western leg of the "prebuild" was completed and Foothills Pipe Lines Ltd. applied for leave to open. Upon completion of the Board's technical review of the pipeline operating parameters and test results, the application for leave to open was granted approval and gas commenced to flow on 1 October 1981.

During 1981, the Northern Pipeline Agency approved the plans, drawings, standards and specifications for the construction of the eastern leg. The 1981 construction program of 430.kilometres of the eastern leg is virtually completed, and the remaining 206 kilometres is scheduled to be completed in 1982.

During 1980, Foothills carried out a series of "burst tests" in Northern Alberta on 1219 millimetre and 1422 millimetre O.D. pipe to evaluate the fracture arrest characteristics of the selected piping. In August 1981, Foothills submitted to the Board the final report on the test program. The mainline pipe specifications are presently being reviewed on the basis of the report.

In the 1980/81 winter season, Foothills commenced construction of the Quill Creek Test Facility located near Whitehorse, Yukon. The purpose of testing at this site is to demonstrate and verify pipeline construction techniques and pipeline design concepts which have been developed for the various conditions to be encountered while constructing in discontinuous permafrost. Extensive qualitative and quantitative monitoring of the tests with respect to temperature and displacement is planned. The winter work program included such measures as road building, construction of work pads, and grading. The 1981 summer work program included the evaluation of buried pipes with and without heat elements, side hill excavation, deep trenching, granular material, and peat work pads. Testing and monitoring at Quill Creek will continue through 1982.

Pipeline Incidents

The Board's involvement with the investigation of the causes of pipeline incidents is part of its efforts to improve the safe operation of pipelines. The knowledge of the causes of past failures is a major factor in improving pipeline standards, operational procedures, technology development, and regulatory requirements. As described in Figure 7, there were a total of 31 incidents in 1981 involving pipelines under the Board's jurisdiction.

SUMMARY OF 1981 PIPELINE INCIDENTS

| | Gas Pipe- lines | Oil & Product Pipe- lines | High Vapour Pres- sure Pipe- lines | Total |
|--|-----------------------|------------------------------------|---|-------|
| Equipment failure | 2 | — | 1 | 3 |
| External corrosion | 1 | — | — | 1 |
| Internal corrosion | — | 16 | — | 16 |
| Settlement/rock slides | — | — | — | — |
| Other | 2 | 3 | — | 5 |
| Damage during construction by others | 1 | 3 | 1 | 5 |
| Defective welds | 1 | — | — | 1 |
| TOTAL | 7 | 22 | 2 | 31 |

Oil Product and High Vapour Pressure Pipeline Incidents

Referring to Figure 7, the large number of internal corrosion leaks were mainly due to Westspur's gathering system. The resultant damages were not considered to be a significant safety hazard but the environmental impact and costly restorative expenses did warrant corrective action. Westspur is presently evaluating the effectiveness of a polyethylene liner which was recently fitted into sections of the existing

system's piping. The Board will be monitoring the performance of the line for the next two years.

The Board is also monitoring the corrosion prevention measures being implemented by Manito Pipe Line Ltd. on a 1 kilometre section of its Blackfoot, Alberta extension. The corrosion problem, which resulted in two leaks in 1981, appears to be caused by the presence of sand and bacteria deposits which, when combined with water, form a sulphur concentration cell. Manito's corrosion prevention entails a vigorous pigging program aimed at removing the bacteria deposit followed by the injection of a film-forming corrosion inhibitor. The Company is also examining the feasibility of lowering the ambient temperature of the crude oil in an attempt to kill the corrosion-related bacteria.

Third party mechanical damage to pipelines continues to be a difficult problem to control and has one of the highest hazard potentials. Only two significant incidents occurred in 1981.

In March 1981, Petroleum Transmission Company's pipeline northeast of Moosomin, Saskatchewan ruptured releasing 464 cubic metres of propane. Board investigation revealed that this rupture was caused by mechanical damage done to the pipe by a backhoe. The damage had occurred a considerable time prior to the rupture.

In May 1981, TNPL Inc., acting on information from the Regional Municipality of Peel, discovered a leak in its pipeline in Mississauga, Ontario. A total of 46 cubic metres of oil and gasoline had leaked from the pipeline. Some of the lost product migrated into sewers and a creek. Investigation showed this leak to have been caused by third party mechanical damage.

The Board is also investigating an incident which took place at Trans Mountain Pipe Line Company's Burnaby Terminal. Trans Mountain experienced a failure in a floating roof on one of its storage tanks. While this failure did not involve an oil spill, the escaping fumes caused discomfort to nearby residents.

Gas Pipeline Incidents

Referring to Figure 7, four of the seven gas pipeline incidents recorded by the Board in 1981 were considered to be minor in nature.

Two of the three more significant incidents occurred in West-coast's 508 millimetre Grizzly Valley pipeline in the gathering system upstream of the Pine River Gas Processing Plant. On 20 July 1981 the first break occurred releasing 1 132 thousand cubic metres of sour gas. One week later as the pipeline was being placed back in service a second break

occurred releasing 425 thousand cubic metres of sour gas. Internal stress corrosion cracking was cited in both incidents as the principal cause of failures. The pipeline has resumed operation under controlled sour gas composition conditions. Both the Company and the Board are monitoring the pipeline's performance and the results of ongoing investigations prior to deciding on its future.

The third incident occurred on 26 July 1981 just south of Taylor, British Columbia in a section of Westcoast's 762 millimetre O.D. mainline. The pipeline break at this location resulted in the release of 2 633 thousand cubic metres of sweet gas. A small fire resulted but no injuries were reported. External corrosion was cited as the cause for this break and the Board was studying the effectiveness of the Company's external corrosion detection program at year end.

On 11 December 1981 there was a serious construction accident on the Trans Quebec & Maritimes pipeline construction site north of Montreal, which resulted in a fatality. The accident is being investigated.

Pipeline Inspection

The Board inspects the facilities of the companies under its jurisdiction to ensure that environmental protection measures are being followed, employee and public safety is being respected, and facilities are constructed and maintained in a manner which meets the Board's standards.

In 1981, extensive inspection was carried out on Trans-Canada's pipeline construction in Saskatchewan, Manitoba, Ontario, and Quebec. Extensive inspection was also carried out on Trans Québec & Maritimes' pipeline construction in Quebec and on TNPL Inc.'s Ottawa lateral.

The Board also conducted a number of post-construction inspections. These inspections included Champion's Thorne, Ontario to Temiscaming, Quebec lateral; Cochin's Regina lateral; Interprovincial's Alberta pipe replacement program; Murphy's Saskatchewan loop; TransCanada's loops in Saskatchewan, Manitoba, and Ontario; parts of Westcoast's system; and Interprovincial's Welland Canal crossing.

Inspection also covered operational matters such as emergency shutdown tests, noise surveys, odour emission surveys, sulphur emission surveys and restoration at oil spill sites. The facilities inspected included tank farms, compressor and pump stations, gas processing plants, and metering stations.

Pipeline Crossings by Third Parties

The Board has jurisdiction over approximately 30 000 kilometres of pipeline networks that transport gas and oil across Canada. Prior to any construction activity affecting these pipelines, authorization of the activity must be granted by the Board. In 1981, 655 crossing orders were issued.

The Board has also re-evaluated the application process associated with third party pipeline crossings with the objective of reducing the required processing time. Changes were implemented which resulted in a considerable reduction in the time required to process crossing applications.

ELECTRIC POWER ACTIVITIES

Electricity

At the end of 1981 Canada's total net installed electrical generating capability was approximately 81 000 megawatts of which hydroelectric plants accounted for about 48 602 megawatts, conventional thermal stations 26 845 megawatts and nuclear power 5 694 megawatts. Planned changes in 1981 were additions of approximately 2 172 megawatts of hydroelectric, 328 megawatts of conventional thermal, and 630 megawatts of nuclear generation. Total generation of electricity in 1981 is estimated to have been 377 621 gigawatt hours, up about three percent over 1980. Of this, approximately seventy percent was supplied from hydroelectric generation, twenty percent from conventional thermal generation and ten percent from nuclear generation.

International and Interprovincial Transfers of Electricity

Gross exports of electricity in 1981 were 35 372 gigawatt hours (30 181 gigawatt hours in 1980) and imports were 1 497 gigawatt hours (2 940 gigawatt hours in 1980), resulting in net exports of 33 875 gigawatt hours (27 241 gigawatt hours in 1980). These net exports constituted about nine percent of total Canadian generation (about eight percent in 1980).

Export revenues of about \$1 144 million (\$794 million in 1980) and import costs of \$5.6 million (\$3 million in 1980) resulted in a net revenue of approximately \$1 139 million (\$791 million in 1980).

In 1981, total Canadian electricity exports were 17 percent higher than in 1980 and earned 44 percent higher revenue.

Of the major exporting utilities, B.C. Hydro enjoyed by far the largest increase in export quantities and revenues in 1981. Due to high river flows, B.C. Hydro exported more than ten

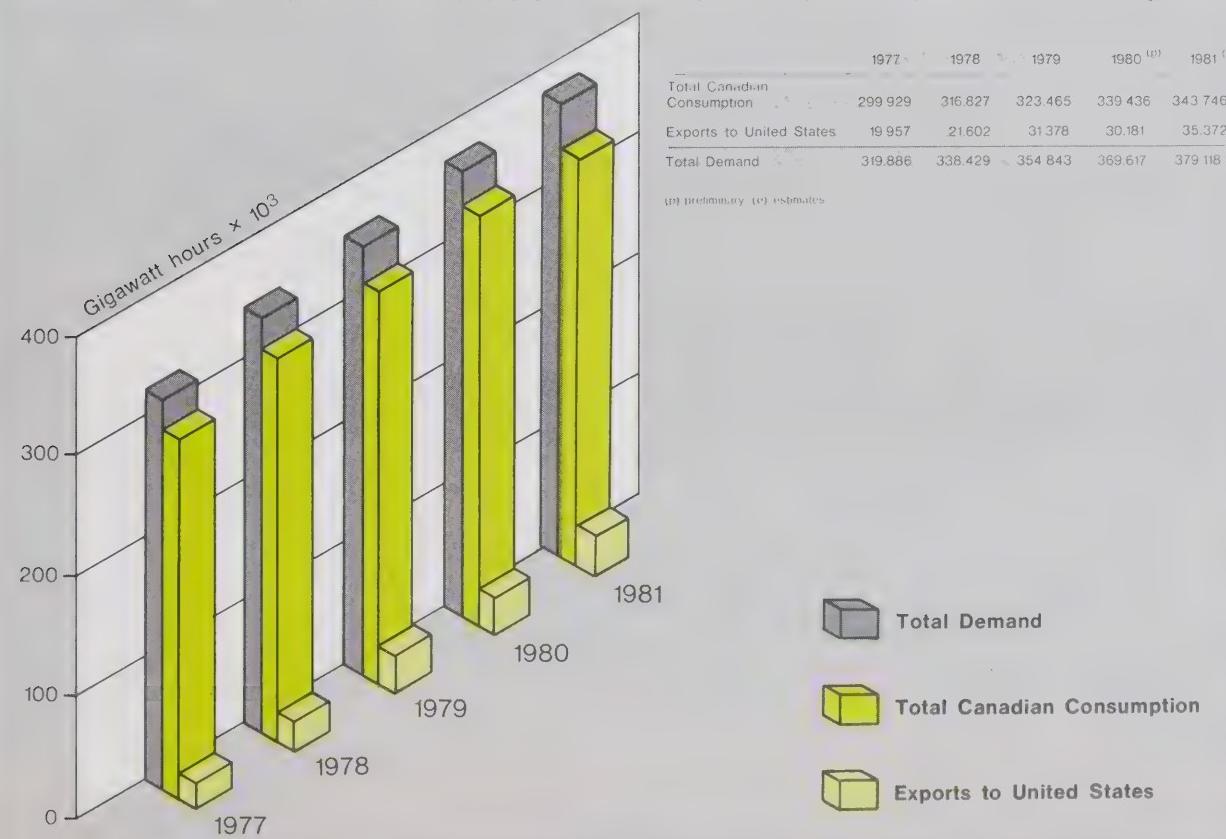
Electricity Supply

Figure 10



Electricity Demand

Figure 11



times the amount it exported in 1980 and its revenues rose from approximately \$16 million to over \$263 million. Hydro-Québec and Ontario Hydro increased exports slightly while their revenues increased by up to twenty percent. The New Brunswick Electric Power Commission's exports were down about twenty percent due to a large reduction in firm exports from the Coleson Cove oil-fired generating station. Substantially increased interruptible exports offset the reduction so that total revenues increased by more than twenty percent over 1980. The increased revenue of exporters located in eastern Canada reflects the increasing costs of oil-fired generation in the eastern United States. Manitoba Hydro encountered poor water conditions early in the year and used its interconnections to purchase energy from United States utilities. The latter part of the year saw improved conditions in Manitoba and at year end exports were up slightly over 1980.

Returns submitted to the Board by the major exporting utilities showed that of the exports over the major system interconnections in 1981, 60 percent of the energy came from hydro generation, 32 percent from imported coal, six percent from imported oil, and two percent from nuclear and Canadian fossil fuel.

Before electricity can be sold to United States markets it must be offered to neighbouring Canadian markets and be found to be surplus to Canadian requirements. For these reasons the Board monitors Canadian power generation and transfers although it does not regulate these matters.

Electricity supply and demand are tabulated and displayed in Figures 10 and 11. Figure 12 shows exports and imports in 1981 as well as interprovincial transfers for the 12 months ending October 1981.

New certificates of public convenience and necessity and related orders issued during the year are tabulated in Appendices E-I and E-II.

New licences to export power and energy and related orders issued during the year are tabulated in Appendices E-III and E-IV.

Exports of electric energy under each licence and order during the year are tabulated in Appendix E-V and the total electric energy trade is shown in Appendix E-VI.

Other Electric Power Activities

The report on the output, fuel consumption and operating characteristics of Canadian thermal generation stations in 1979 was completed. Work is now underway to publish future reports in metric units consistent with the

government's metrication policy. Advisory services were provided to other departments and outside agencies during 1981 including assistance to the Department of Energy, Mines and Resources on the feasibility of converting the Coleson Cove generating station in New Brunswick from oil to coal. A staff member was seconded to Atomic Energy of Canada Ltd. to assist in studies related to existing and potential electrical surplus. In addition, advice was given to the Nova Scotia Tidal Power Corporation on the Update of the Fundy Tidal Power Study. Electricity supply forecast activities were undertaken contributing to the Board's report on Canadian Energy Supply and Demand 1980-2000. Studies are also continuing on power system reliability and interconnections.

The Branch also participated in the development of a draft CSA standard on the Principles and Practices of Electrical Coordination between Pipeline and Electrical Power Lines, as well as the continued updating of the Canadian Electrical Code, Part III. Several technical papers for presentation to electrical engineering societies on new techniques for evaluating the reliability and economic benefits of interconnected power systems taking into account the correlation of the loads on the interconnected systems were completed.

FINANCIAL REGULATORY MATTERS

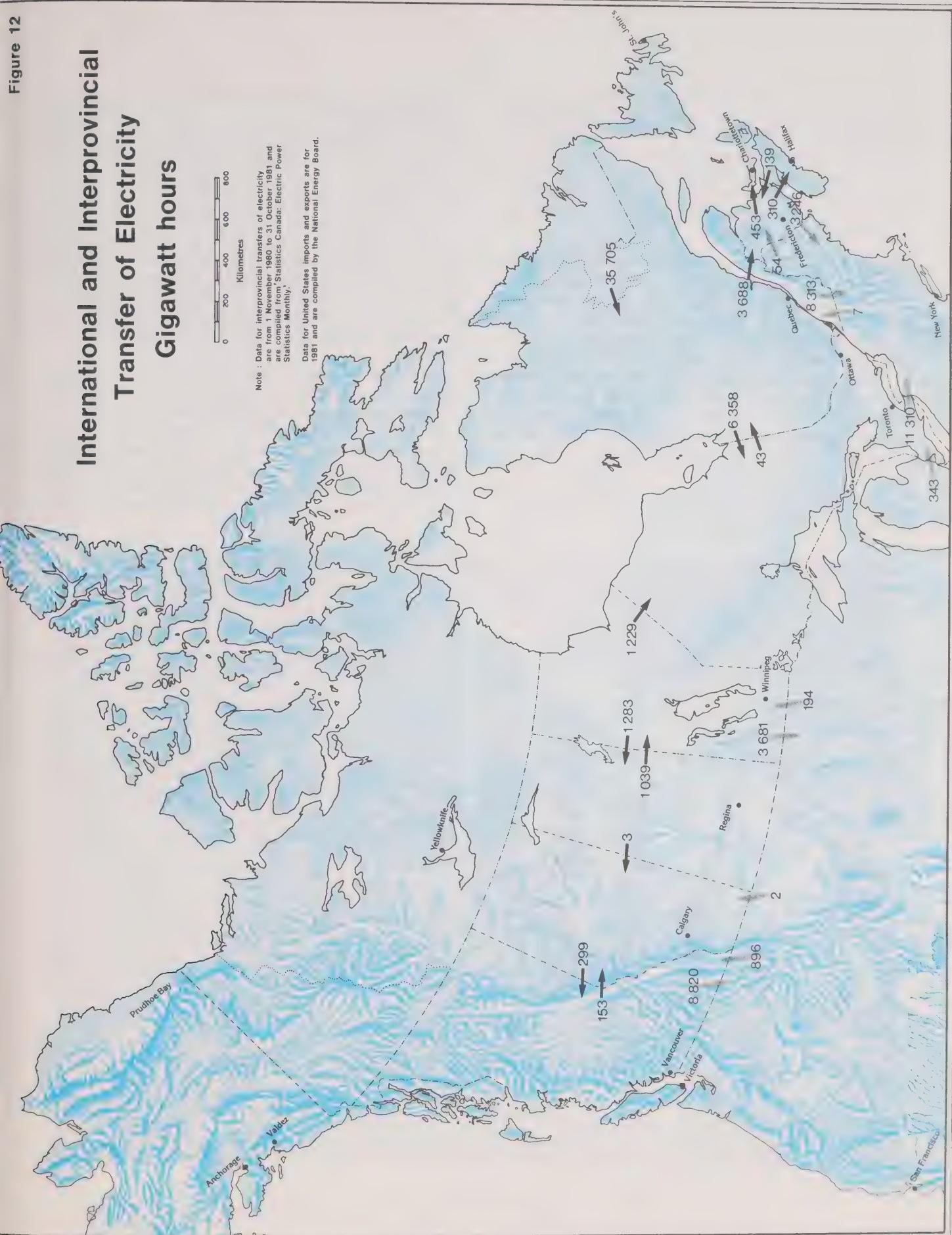
During 1981, the Board established the Financial Regulatory Panel in order to expedite the handling of tariff filings and financial matters related to pipelines regulated under Part IV of the National Energy Board Act. Formation of this panel has allowed the Board to respond more effectively to the growing number of applications made in respect of tolls and tariffs. These applications are largely attributable to changes in throughput, cost of capital, wage settlements and price inflation together with the continued emergence of new regulatory issues. The Board expects that the activity of this panel will increase during 1982 owing to the increasing number and growing complexity of regulatory issues arising from economic and other factors of change.

Under the provisions of the Petroleum Administration Act and Regulations, audits were conducted of the oil and oil product exports reported to the Board, including the export charges levied and paid thereon. Where warranted, adjustments to the charges paid were made which gave rise to either the assessment of additional charges or the refund of export charge overpayments. During 1981, the Board collected and deposited to the Consolidated Revenue Fund approximately \$970 million. The program for the audit of licensed exports of propane and butanes was continued in 1981.

Effective 1 May 1981, pursuant to Part I of the Petroleum Administration Act, the Board became responsible for the

Figure 12

International and Interprovincial Transfer of Electricity Gigawatt hours



extension of export controls and export charges to aviation and marine bunkers used by foreign and domestic carriers travelling in international commerce. Under this program the Board has administered the collection of \$143 million in transportation fuel compensation recovery charges for 1981. During the year, the Board initiated field examinations to review the reporting systems of licencees. In 1982, an audit program will be implemented.

During the year, the Board maintained its monitoring of the accounting and financial activities of oil and gas pipeline companies under its jurisdiction. This was accomplished through the analysis of periodic and special reports required by the Board, in addition to ongoing field audits to verify compliance with the Board's Uniform Accounting Regulations. Audits were also carried out to measure compliance with specific directives issued by the Board in relation to accounting, toll and tariff matters such as the treatment to be accorded particular items of rate base or cost of service. The Toll Information Regulations, passed in April 1979 under the authority of section 88 of the National Energy Board Act (SOR/79-319), empower the Board to obtain information directly from the pipeline companies falling under its jurisdiction to enable it to analyse and compare the actual operating

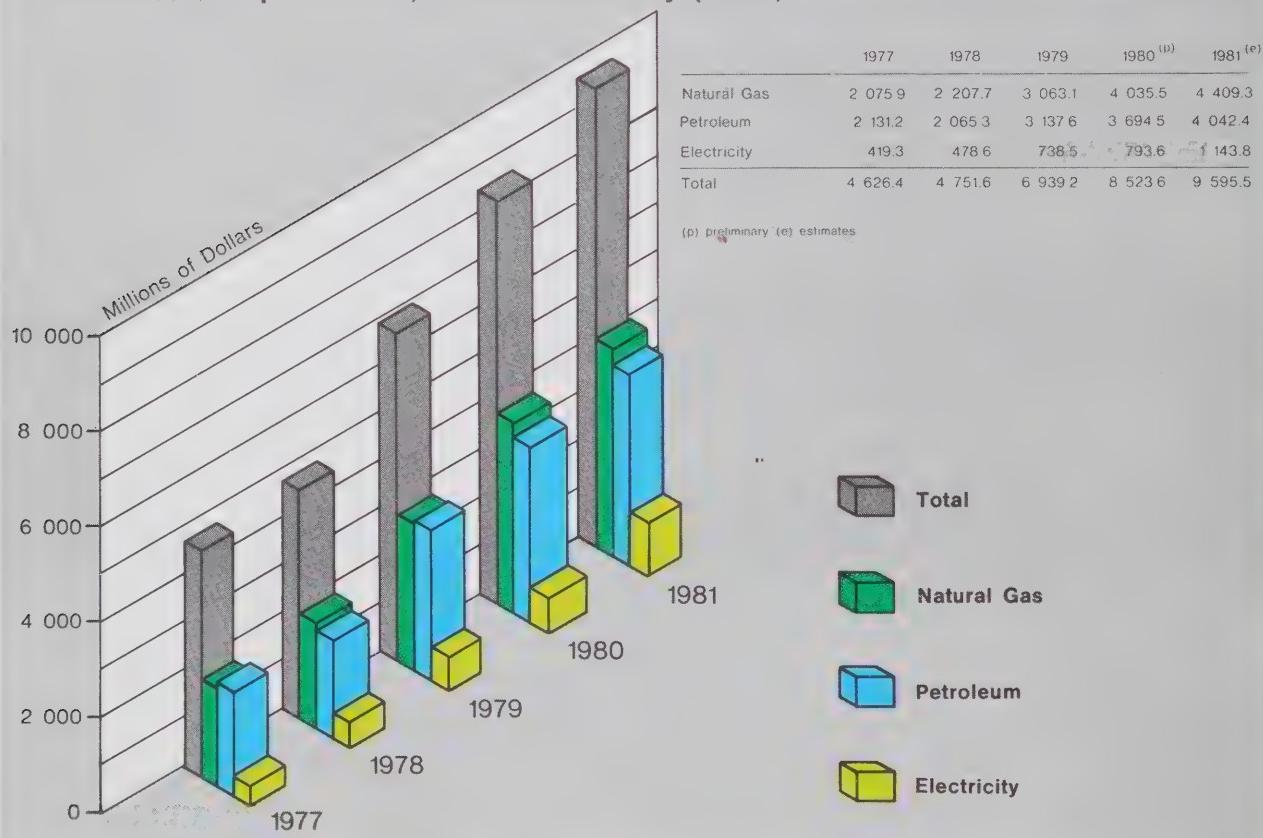
results of companies with the estimates used as a basis for fixing tolls and tariffs.

The Board continued the internal review of its regulatory procedures with the object of improving communications between itself and applicants and intervenors in connection with applications made under Part IV of the National Energy Board Act. The National Energy Board Rules of Practice and Procedure were amended (SOR/78-667, 22 August 1978) to include regulations pertaining to the information required to be filed by a gas pipeline company applying for an order fixing tolls or tariffs under Part IV of the Act. Development of similar amendments applying to oil pipeline companies continued with completion expected early in 1982.

The Board continued to evaluate and modify its toll adjustment procedures for oil pipelines subject to active regulation. Under these procedures, such pipelines may apply for a revised tariff to reflect routine changes in throughput, rate base and cost of service without a public hearing, provided there is no change in the principles or the rate of return established in a previous Board decision. During the year, nine tariff revisions were allowed pursuant to these procedures.

Dollar Value of Exports of Oil, Gas and Electricity (Gross)

Figure 13



During 1981, the Board also recognized the need for amendments to the Oil and Gas Uniform Accounting Regulations to update them in respect of currently accepted accounting principles, practices, and terminology. Work in this area will continue in 1982.

ECONOMIC MATTERS

The Board undertook a considerable number of economic evaluations and studies during the year. Proposals were examined, evaluated and analysis undertaken covering viability, regional and social impact, Canadian content, net economic benefits and the application of surplus tests. Assessments were conducted on the TQM facility, covering the extension of the natural gas pipeline within Quebec and into the Maritime Provinces, and on the regional socio-economic aspects of the application by Interprovincial to build and operate an oil pipeline from Norman Wells to Northern Alberta. Considerable attention was also paid to the Board's review of the Arctic Pilot Project and the important concerns relating to its regional impact, and its socio-economic and cost-benefit considerations.

The Board continued to improve and develop the economic models used to evaluate evidence and the changing continental and global energy situation. With respect to the Canadian Energy Supply & Demand (1980-2000) Inquiry analysis continued on the forecast of energy demand in Canada and the development of long-range macro-economic forecasts, particularly with relation to the impact of the National Energy Program. A number of forecasts were prepared involving alternative scenarios incorporating the impact of varying assumptions regarding economic growth, the consequences of delays or cancellation of large energy projects and the refinement of regional inputs. Revisions were made to the Board's macro-economic model to incorporate the energy pricing agreements with the producing provinces and a review was commenced on the impact of these and the new Federal Budget on the economic outlook. Attention was also directed to the short-term outlook, particularly for wages and inflation and their effects on pipeline transmission costs. The Board continued to update the demand forecasting model by improving the methodology, equation and support system on sector, fuel type and region. The development by a consultant of a model to forecast truck gasoline and diesel consumption was monitored by the Board and input data were prepared.

During the year the Board continued to develop and improve the quality of energy data utilized. Further computerization and disaggregation of regions were undertaken, the methodology of data collection was refined and an update of the data base shared with EM & R was initiated.

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G-I

CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY FOR GAS PIPELINES ISSUED DURING 1981

| APPLICANT | FACILITIES | ESTIMATED COST | HEARD | ISSUED | CERTIFICATE NO. |
|-------------------------------|--|----------------|-----------------------------------|------------------|-----------------|
| TransCanada PipeLines Limited | Approximately 118 km of looping in Saskatchewan, Ontario and Quebec plus additional compression facilities | \$112,000,000 | May 19-22 1981 and May 25-26 1981 | 17 July 1981 | GC-67 |
| Trans Quebec & Maritimes Inc. | Approximately 740 km of mainline and 1000 km of laterals from Lévis/Lauzon in Quebec through New Brunswick to Halifax, Nova Scotia | \$360,000,000 | March 10 1981 - April 24 1981 | 18 December 1981 | GC-68 |

G-II

ORDERS RELATING TO NEW GAS PIPELINE FACILITIES ISSUED DURING 1981 CLASS "B" CONSTRUCTION

| APPLICANT | FACILITIES | ESTIMATED COST | ISSUED | ORDER NO. |
|--|---|----------------|---------------|-----------|
| Many Islands Pipe Lines (Canada) Limited | Sales tap, Saskatchewan | \$ 4,860 | 7 Oct. 1981 | XG-6-81 |
| TransCanada PipeLines Limited | St. Lazare Regulating Station and appurtenant facilities, Quebec | \$ 587,400 | 27 Mar. 1981 | XG-1-81 |
| TransCanada PipeLines Limited | Hamilton Gate Sales Meter Station and appurtenant facilities, Ontario | \$ 433,800 | 6 Aug. 1981 | XG-4-81 |
| TransCanada PipeLines Limited | St. Jean Sales Meter Station, Quebec | \$ 249,900 | 18 Nov. 1981 | XG-7-81 |
| Westcoast Transmission Company Limited | Quesnel River Pulp Mill Meter Station No. 49 and appurtenant facilities, British Columbia | \$ 118,000 | 3 June 1981 | XG-2-81 |
| Westcoast Transmission Company Limited | Additional gas metering, Summit Lake Meter Station No. 27, British Columbia | \$ 271,000 | 15 July 1981 | XG-3-81 |
| Westcoast Transmission Company Limited | 103 Mile House Meter Station No. 50 and appurtenant facilities, British Columbia | \$ 74,800 | 30 Sept. 1981 | XG-5-81 |

G-II (cont'd)

ORDERS RELATING TO NEW GAS PIPELINE FACILITIES ISSUED DURING 1981 CLASS "C" CONSTRUCTION

| APPLICANT | FACILITIES | ESTIMATED COST | ISSUED | ORDER NO. |
|--|--|----------------|--------------|-----------|
| TransCanada PipeLines Limited | All | \$46,733,547 | | |
| | Pipe replacement, corrosion protection, station changes, buildings, etc., contingencies | \$39,622,892 | 13 May 1981 | XGM-5-81 |
| | Pipe replacement, station changes, buildings, etc. | \$ 5,215,655 | 13 May 1981 | XGM-6-81 |
| Westcoast Transmission Company Limited | Spare aero assemblies | \$ 1,895,000 | 25 Nov. 1981 | XGM-13-81 |
| | All | \$60,586,400 | | |
| | Gas turbine replacements | \$19,387,400 | 15 Jan. 1981 | XGM-1-81 |
| Westcoast Transmission Company Limited | Contingencies | \$ 1,000,000 | 11 Feb. 1981 | XGM-2-81 |
| | Kotaneelee River crossing revetment | \$ 330,000 | 11 Feb. 1981 | XGM-3-81 |
| | Additional facilities, warehouses, mobile equipment, office services | \$24,343,000 | 20 May 1981 | XGM-7-81 |
| Alberta Natural Gas Company Ltd. | Additional facilities, materials control, mobile equipment, office services, aviation | \$ 9,318,000 | 20 May 1981 | XGM-8-81 |
| | Loop extension, bypass, water treatment plant, paving, truck | \$ 3,753,000 | 6 Aug. 1981 | XGM-12-81 |
| | Additional facilities, mobile equipment, office services | \$ 2,455,000 | 25 Nov. 1981 | XGM-14-81 |
| ICG Transmission Limited | Telemetry, work, safety and office equipment, office expansion, welding protection, etc. | \$ 1,907,420 | 31 July 1981 | XGM-11-81 |
| Minell Pipeline Ltd. | All | \$ 30,975 | | |
| | Grounds, contingencies | \$ 14,475 | 3 June 1981 | XGM-9-81 |
| | Pipeline replacement and lowering, Ontario | \$ 16,500 | 2 Sept. 1981 | XGM-10-81 |
| Minell Pipeline Ltd. | Contingencies | \$ 3,000 | 15 Apr. 1981 | XGM-4-81 |

G-III

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1981

| TYPE OF ORDER | LICENSEE | ORDER NUMBER | POINT OF EXPORT | TERM OF ORDER | | MAXIMUM |
|---|---|--------------|-----------------|---------------|----------|---|
| | | | | FROM | TO | |
| New Liquefied Natural Gas Export Orders | 1. Gaz Métropolitain, inc. ^(a) | GO-2-81 | Montreal, P.Q. | 81-09-11 | 81-09-30 | 3 500 gigajoules |
| New Ethane Export Order | 1. Dome Petroleum Limited | GO-1-81 | Elmore, Sask. | 81-03-01 | 81-12-31 | $160 \times 10^3 \text{ m}^3$ |
| New Ethylene Export Order | 1. Dow Chemical of Canada Limited | EYL-1-81 | Sarnia, Ont. | 82-01-01 | 82-12-31 | 9 000 000 Kilograms |
| New Propane Export Orders | 1. Amoco Canada Petroleum Company Limited | EPR-924-81 | Sarnia, Ont. | 81-07-01 | 81-10-31 | No maximum export volume so long as the same propane is imported within 30 days. |
| | 2. Amoco Canada Petroleum Company Limited | EPR-925-81 | Sarnia, Ont. | 81-07-15 | 82-03-31 | Same volume as was imported as part of an NGL mix. |
| | 3. NGL Supply Limited | EPR-926-81 | Sarnia, Ont. | 81-11-24 | 81-12-31 | Same volume as was imported |
| New Butanes Export Orders | 1. Dome Petroleum Limited | EBU-913-81 | Sarnia, Ont. | 81-04-01 | 81-09-30 | No maximum export volume so long as the same butanes are imported within 30 days. |
| | 2. Amoco Canada Petroleum Company Limited | EBU-914-81 | Sarnia, Ont. | 81-07-01 | 81-10-31 | No maximum export volume so long as the same butanes are imported within 30 days. |
| | 3. Amoco Canada Petroleum Company Limited | EBU-915-81 | Sarnia, Ont. | 81-07-15 | 82-03-31 | Same volume as was imported as part of an NGL mix. |

(a) This Order authorizes the export of 3 500 gigajoules of liquefied natural gas which is approximately $89.6 \times 10^3 \text{ m}^3$ @ 39.06 MJ/m³ gas equivalent.

G-III (Cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1981

| TYPE OF ORDER | LICENSEE | ORDER NUMBER | DATE OF ISSUE | COMMENTS |
|---|---|--------------|---------------|---|
| Orders Amending Existing Natural Gas Export Licences. | 1. TransCanada PipeLines Limited | AO-15-GL-1 | 81-02-12 | Amendment establishing that the price to be received for the gas exported, including all transmission costs of moving the gas to the international boundary line between Canada and the United States of America shall be on and after the 1st day of April, 1981, not greater than and not less than the Canadian dollar equivalent of \$4.60 in United States currency per GJ of gross heating value. |
| | 2. Alberta and Southern Gas Co. Ltd. | AO-16-GL-3 | 81-02-12 | See Item 1. |
| | 3. Westcoast Transmission Company Limited | AO-17-GL-4 | 81-02-12 | See Item 1. |
| | 4. Canadian-Montana Pipe Line Company | AO-18-GL-5 | 81-02-12 | See Item 1. |
| | 5. Niagara Gas Transmission Limited | AO-26-GL-6 | 81-02-12 | See Item 1. This amendment also establishes that the price to be received for gas exported as peaking service gas, including all transmission costs to the international boundary, shall be the aggregate of: (a) the price prescribed in the Natural Gas Prices Regulations, 1980 for gas sold as peaking service gas, and (b) the cost of transportation of the gas on the Niagara Gas Transmission Limited System from Cornwall to the international boundary. |
| | 6. Alberta and Southern Gas Co. Ltd. | AO-13-GL-16 | 81-02-12 | See Item 1. |
| | 7. Canadian-Montana Pipe Line Company | AO-16-GL-17 | 81-02-12 | See Item 1. |
| | 8. TransCanada PipeLines Limited | AO-25-GL-18 | 81-02-12 | See Item 1. |
| | 9. TransCanada PipeLines Limited | AO-26-GL-18 | 81-11-19 | Amendment, which removes the daily volume limitation on gas exports during the period 81-11-01 to 82-10-31. The amendment also provides for the export of gas at a point near Niagara Falls, Ontario in addition to the existing point of export near Emerson, Manitoba for the period ending 82-10-31. |
| | 10. TransCanada PipeLines Limited | AO-18-GL-19 | 81-02-12 | See Item 1. This amendment also revokes subcondition 5(3) of the licence dealing with the price to be received for gas exported as peaking service gas. |
| | 11. TransCanada PipeLines Limited | AO-27-GL-20 | 81-02-12 | See Item 1. |
| | 12. TransCanada PipeLines Limited | AO-28-GL-20 | 81-11-19 | Amendment, which removes the daily volume limitation on gas exports during the period 81-11-01 to 82-10-31. |
| | 13. Alberta and Southern Gas Co. Ltd. | AO-15-GL-24 | 81-02-12 | See Item 1. |
| | 14. Canadian-Montana Pipe Line Company | AO-19-GL-25 | 81-02-12 | See Item 1. |
| | 15. ICG Transmission Limited | AO-15-GL-28 | 81-02-12 | See Item 1. |

G-III (Cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1981

| TYPE OF ORDER | LICENSEE | ORDER NUMBER | DATE OF ISSUE | COMMENTS |
|---------------|---|--------------|---------------|--|
| | 16. ICG Transmission Limited | AO-16-GL-29 | 81-02-12 | Amendment establishing that the price to be received for the gas exported, including all transmission charges of moving gas to the international boundary line between Canada and the United States of America, shall be on and after the 1st day of April, 1981, not greater than and not less than the Canadian dollar equivalent of \$3.68 in United States currency per GJ of gross heating value. |
| | 17. Alberta and Southern Gas Co. Ltd. | AO-13-GL-35 | 81-02-12 | See Item 1. |
| | 18. Canadian-Montana Pipe Line Company | AO-14-GL-36 | 81-02-12 | See Item 1. |
| | 19. TransCanada PipeLines Limited | AO-20-GL-37 | 81-02-12 | See Item 1. |
| | 20. TransCanada PipeLines Limited | AO-21-GL-37 | 81-11-19 | Amendment, which removes the daily volume limitation on gas exports during the period 81-11-01 to 82-10-31. |
| | 21. TransCanada PipeLines Limited | AO-13-GL-38 | 81-02-12 | See Item 1. |
| | 22. TransCanada PipeLines Limited | AO-13-GL-39 | 81-02-12 | See Item 1. |
| | 23. Westcoast Transmission Company Limited | AO-24-GL-41 | 81-02-12 | See Item 1. |
| | 24. TransCanada PipeLines Limited | AO-19-GL-43 | 81-02-12 | See Item 1. |
| | 25. Canadian-Montana Pipe Line Company | AO-2-GL-52 | 81-02-12 | See Item 1. |
| | 26. Canadian-Montana Pipe Line Company | AO-2-GL-53 | 81-02-12 | See Item 1. |
| | 27. Columbia Gas Development of Canada Ltd. | AO-2-GL-54 | 81-02-12 | See Item 1. |
| | 28. Columbia Gas Development of Canada Ltd. | AO-3-GL-54 | 81-11-05 | Amendment, which provides for an increase in the daily and annual quantities that may be exported from 81-11-01 to 84-12-31. |
| | 29. Niagara Gas Transmission Limited | AO-2-GL-55 | 81-02-12 | See Item 1. |
| | 30. ProGas Limited | AO-3-GL-56 | 81-02-12 | See Item 1. |
| | 31. Sulpetro Limited | AO-3-GL-57 | 81-02-12 | See Item 1. |
| | 32. Sulpetro Limited | AO-4-GL-57 | 81-03-10 | Amendment, which provides for a twelve-month extension of the licence term to 83-10-31, and which authorizes maximum exports of $2\ 089.1\ 10^3\text{m}^3$ per day or $612.8\ 10^6\text{m}^3$ per year for the extended twelve-month period. |
| | 33. Sulpetro Limited | AO-5-GL-57 | 81-12-17 | Amendment, which removes the daily volumes limitation on gas exports for the period ending 82-10-31, and which raises the annual quantity that may be exported from 81-11-01 to 82-10-31. |

G-III (Cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1981

| TYPE OF ORDER | LICENSEE | ORDER NUMBER | DATE OF ISSUE | COMMENTS |
|---------------|--------------------------------------|--------------|---------------|---|
| | 34. Pan-Alberta Gas Ltd. | AO-3-GL-58 | 81-02-12 | See Item 1. |
| | 35. Pan-Alberta Gas Ltd. | AO-3-GL-59 | 81-02-12 | See Item 1. |
| | 36. TransCanada PipeLines Limited | AO-2-GL-60 | 81-02-12 | See Item 1. |
| | 37. Consolidated Natural Gas Limited | AO-3-GL-61 | 81-02-12 | See Item 1. |
| | 38. Consolidated Natural Gas Limited | AO-4-GL-61 | 81-02-12 | Amendment, which raises the daily and annual volume limitations to $3\ 232.9\ 10^3 m^3$ and $1\ 180.0\ 10^6 m^3$ respectively, for exports at a point near Monchy, Saskatchewan during the period 1981-11-01 to 1982-10-31. |
| | 39. Pan-Alberta Gas Ltd. | AO-1-GL-62 | 81-02-12 | See Item 1. |
| | 40. Pan-Alberta Gas Ltd. | AO-1-GL-63 | 81-02-12 | See Item 1. |
| | 41. Union Gas Limited | AO-1-GL-64 | 81-02-12 | See Item 1. |

| TYPE OF ORDER | LICENSEE | ORDER NUMBER | DATE OF ISSUE | COMMENTS |
|--|---|-------------------------------|----------------------|---|
| Orders Amending Existing Natural Gas Export Orders | 1. Western Decalta Petroleum (1977) Limited 2. Gaz Métropolitain, inc. | AO-6-MO-49-75 AO-1-GO-4-80 | 81-02-12 81-01-15 | An amendment establishing that the price to be received for the gas exported, including all transmission costs of moving gas to the international boundary line between Canada and the United States of America, shall be on and after the 1st day of April, 1981, not greater than and not less than the Canadian dollar equivalent of \$4.60 in United States currency per GJ of gross heating value. Amendment, which provides that the licensee may export a total quantity of gas not exceeding the aggregate of: (a) the volume of natural gas equivalent, on a heat content basis, to the volume of LNG imported under Order No. GO-3-80, and (b) the volume of natural gas required to provide compressor fuel and line loss make-up for transportation services, providing this volume does not exceed 4.61 percent of (a). |

G-III (Cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1981

| TYPE OF ORDER | LICENSEE | ORDER NUMBER | DATE OF ISSUE | COMMENTS |
|--|---|-----------------|---------------|--|
| Orders Amending Existing Ethylene Export Orders | 1. Esso Chemical Canada | AO-2-EYL-2-79 | 81-03-05 | Amendment, which extends the duration of the licence. |
| Orders Amending Existing Propane Export Licences | 1. Dome Petroleum Limited | AO-7-GL-31 | 81-07-29 | An amendment establishing that the propane exported under heading "Period" shall be propane designated by the Board as "Export Volumes" according to the definition contained in the Board's letter of 23 April 1980 to the LPG Industry regarding export allocation procedures. |
| | 2. Amoco Canada Petroleum Company Limited | AO-5-GL-32 | 81-07-29 | An amendment establishing that the propane exported under heading "Period" shall be propane designated by the Board as "Export Volumes" according to the definition contained in the Board's letter of 23 April 1980 to the LPG Industry regarding export allocation procedures. |
| | 3. Pan Canadian Gas Products Limited | AO-6-GL-34 | 81-07-29 | An amendment establishing that the propane exported under heading "Period" shall be propane designated by the Board as "Export Volumes" according to the definition contained in the Board's letter of 23 April 1980 to the LPG Industry regarding export allocation procedures. |
| Orders Amending Existing Propane Export Orders | 1. NGL Supply Limited | AO-1-EPR-926-81 | 81-12-22 | An amendment which extends the duration of the order. |

G-IV

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1981

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM | | |
|---|-----------------------------|--------------------------------|--|--|---|---|--|
| | | | FROM | TO | DAILY 10 ³ m ³ | ANNUAL 10 ⁶ m ³ | TERM 10 ⁶ m ³ |
| NATURAL GAS | | | | | | | |
| 1. Alberta & Southern Gas Co. Ltd. | GL-3 (AO-16) | Kingsgate, B.C. | 61-10-31 86-10-31 | 86-10-30 87-10-31 | 12 995.4 3 248.9 | 4 341.8 1 085.5 | 109 467.8 |
| 2. Westcoast Transmission Company Limited | GL-4 (AO-17) | Kingsgate, B.C. | 61-12-10 81-12-10 82-11-01 84-11-01 85-11-01 86-11-01 | 81-12-09 82-10-31 84-10-31 85-10-31 86-10-31 87-10-31 | 4 305.8 4 305.8 4 305.8 3 229.4 2 152.9 1 076.5 | 1 444.7 1 300.0 1 444.7 1 083.5 722.4 361.2 | 35 250.9 |
| 3. Canadian-Montana Pipe Line Company | GL-5 (AO-18) | Cardston, Alta. Aden, Alta. | 61-10-31 86-10-31 76-05-11 | 86-10-30 87-10-31 79-12-31 | 1 019.8 255.0 (a) | 310.2 77.6 (a) | 7 382.3 |
| 4. Niagara Gas Transmission Limited | GL-6 (AO-26) | Cornwall, Ont. | 62-09-07 | 87-06-30 | 849.8 | 184.1 | 3 433.0 |
| 5. Alberta & Southern Gas Co. Ltd. | GL-16 (AO-13) | Kingsgate, B.C. | 66-11-01 67-11-01 | 67-10-31 89-10-31 | 3 204.6 6 409.2 | 1 059.9 2 119.8 | 45 721.1 |
| 6. Canadian-Montana Pipe Line Company | GL-17 (AO-16) | Cardston, Alta. Aden, Alta. | 66-11-01 67-11-01 76-05-11 | 67-10-31 89-10-31 79-12-31 | 339.9 679.9 (a) | 103.4 206.8 (a) | 4 652.8 |
| 7. TransCanada PipeLines Limited | GL-18 (AO-26) | Emerson, Man. | 65-11-01 66-11-01 | 68-10-31 89-10-31 | 708.2 4 277.5 ^(c) | 226.6 ^(c) 1 481.5 ^(d) | 33 993.4 |
| 8. TransCanada PipeLines Limited | GL-19 (AO-18) | Philipsburg, Qué. | 65-11-01 | 89-10-31 | 600.6 | 184.1 | 3 059.4 |
| 9. TransCanada PipeLines Limited | GL-20 (AO-28) | Emerson, Man. | 67-11-01 | 91-10-31 | 2 662.8 ^(c) | 909.3 | 21 670.8 |
| 10. TransCanada PipeLines Limited | GL-21 (AO-7) ^(e) | Emerson, Man. | 68-11-05 | 91-10-31 | N/S | 7 019.1 | 169 967.0 |
| 11. Alberta & Southern Gas Co. Ltd. | GL-24 (AO-15) | Kingsgate, B.C. | 68-11-01 69-11-01 91-11-01 | 69-10-31 91-10-31 93-10-31 | 3 427.7 6 685.4 3 835.6 | 1 102.0 2 206.7 1 263.4 | 52 177.0 |
| 12. Canadian-Montana Pipe Line Company | GL-25 (AO-19) | Cardston, Alta. Aden, Alta. | 68-11-01 69-11-01 91-11-01 73-03-27 ^(f) 74-05-14 ^(g) 75-05-14 76-05-14 | 69-10-31 91-10-31 93-10-31 74-05-14 75-05-14 76-05-14 77-05-14 | 339.9 679.9 390.9 2 817.5 2 817.5 2 817.5 1 408.7 | 103.4 206.8 119.0 563.5 563.5 283.3 141.6 | 4 890.8 |

G-IV (Cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1981

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM | | |
|--|-----------------------------|------------------------------------|--|--|---|--|--|
| | | | FROM | TO | DAILY 10 ³ m ³ | ANNUAL 10 ⁶ m ³ | TERM 10 ⁶ m ³ |
| NATURAL GAS | | | | | | | |
| 13. ICG Transmission Limited | GL-28 (AO-15) | Sprague, Man. | 70-11-01 | 95-10-31 | 80.3 | 9.5 | 229.0 |
| 14. ICG Transmission Limited | GL-29 (AO-16) | Fort Frances, Ont. | 70-11-01 | 95-10-31 | 915.6 | 218.5 | 5 462.2 |
| 15. ICG Transmission Limited | GL-30 (AO-3) ^(h) | Sprague, Man. | 70-11-01 | 95-10-31 | 1 321.8 | 344.0 | 8 498.1 |
| 16. Alberta and Southern Gas Co. Ltd. | GL-35 (AO-13) | Kingsgate, B.C. | 70-11-01 85-11-01 86-11-01 | 85-10-31 86-10-31 87-10-31 | 5 807.2 2 903.6 1 451.8 | 1 912.1 956.1 478.1 | 30 116.1 |
| 17. Canadian-Montana Pipe Line Company | GL-36 (AO-14) | Cardston, Alta. Aden, Alta. | 70-11-01 85-11-01 86-11-01 76-05-11 | 85-10-31 86-10-31 87-10-31 79-12-31 | 339.9 170.0 85.0 (a) | 103.4 51.7 25.9 (a) | 1 628.5 |
| 18. TransCanada PipeLines Limited | GL-37 (AO-21) | Emerson, Man. | 70-11-01 | 90-10-31 | 5 546.6 ^(c) | 2 030.1 | 40 601.0 |
| 19. TransCanada PipeLines Limited | GL-38 (AO-13) | Emerson, Man. | 70-11-01 | 90-10-31 | 1 416.4 | 518.4 | 10 368.0 |
| 20. TransCanada PipeLines Limited | GL-39 (AO-13) | Emerson, Man | 70-11-01 | 90-10-31 | 204.0 | 74.6 | 1 493.0 |
| 21. Westcoast Transmission Company Limited | GL-41 (AO-24) | Huntingdon, B.C. ⁽ⁱ⁾ | 71-11-01 72-11-01 80-11-01 | 72-10-31 80-10-31 89-10-31 | 20 773.9 22 922.9 24 622.6 | 7 223.1 (j) (j) | 142 853.3 |
| 22. TransCanada PipeLines Limited | GL-42 (AO-3) ^(e) | Emerson, Man. | 71-04-15 71-11-01 | 71-10-31 94-10-31 | N/S N/S | 232.8 2 612.3 | 60 316.5 |
| 23. TransCanada PipeLines Limited | GL-43 (AO-19) | Emerson, Man. | 71-11-01 | 91-10-31 | N/S | 481.6 | 9 631.5 |
| 24. Consolidated Natural Gas Limited | GL-44 ^(k) | Emerson, Man. | 72-03-15 | 92-10-31 | 4 249.2 | 1 274.8 | 18 951.3 |
| 25. Tenneco LNG Inc. | GL-49 | St. Stephens, N.B. | (l) | (m) | 32 295.0 | 11 820.0 | (n) |
| 26. Western Decalta Petroleum (1977) Limited | MO-49-75 (AO-6) | Coutts, Alta. | 75-11-13 | 82-06-30 | (o) | 0.1 | N/S |

G-IV (Cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1981

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM | | |
|---|-------------------------|--|--|--|---|--|--|
| | | | FROM | TO | DAILY 10 ³ m ³ | ANNUAL 10 ⁶ m ³ | TERM 10 ⁶ m ³ |
| NATURAL GAS | | | | | | | |
| 27. Canadian-Montana Pipe Line Company | GL-52 (AO-2) | Aden, Alta. | 80-01-01 81-01-01 85-01-01 86-01-01 87-01-01 | 80-12-31 84-12-31 85-12-31 86-12-31 87-12-31 | 1 416.4 1 416.4 1 062.3 708.2 354.1 | 283.3 283.3 212.5 141.6 70.8 | 1 841.4 |
| 28. Canadian-Montana Pipe Line Company | GL-53 (AO-2) | Cardston, Alta. | 86-07-01 86-11-01 | 86-10-31 87-10-31 | 340.0 170.0 | 34.5 51.7 ^(p) | 86.2 |
| 29. Columbia Gas Development of Canada Ltd. | GL-54 (AO-3) | Huntingdon, B.C. | 80-01-01 81-11-01 82-01-01 85-01-01 86-01-01 87-01-01 | 80-10-31 81-12-31 84-12-31 85-12-31 86-12-31 87-12-31 | 1 110.4 1 450.0 1 450.0 832.8 555.2 277.6 | 368.3 70.8 423.5 276.2 184.2 92.1 | 2 394.0 |
| 30. Niagara Gas Transmission Limited | GL-55 (AO-2) | Cornwall, Ont. | 80-01-01 80-11-01 84-11-01 85-11-01 86-11-01 | 80-10-31 84-10-31 85-10-31 86-10-31 87-10-31 | 350.0 350.0 262.5 600.0 300.0 | 89.1 89.1 66.8 136.8 68.4 | 717.5 |
| 31. ProGas Limited | GL-56 (AO-3) | Emerson, Man. and Monchy, Sask. (combined maximum) | 80-11-01 84-11-01 85-11-01 86-11-01 81-11-01 82-11-01 85-11-01 86-11-01 | 84-10-31 85-10-31 86-10-31 87-10-31 82-10-31 85-10-31 86-10-31 87-10-31 | 9 440.9 7 088.7 4 720.4 2 360.2 2 613.7 4 849.4 4 249.2 2 124.6 | 3 100.0 2 325.0 1 550.0 775.0 954.0 1 770.0 1 550.0 775.0 | 17 050.0 |
| | | Maximum permitted at Monchy, Sask. as part of combined Emerson/Monchy volumes. | | | | | (7 648.5) ^(q) |
| 32. Sulpetro Limited | GL-57 (AO-5) | Niagara Falls, Ont. | 80-01-01 80-11-01 81-11-01 82-11-01 | 80-10-31 81-10-31 82-10-31 83-10-31 | 2 089.1 ^(r) 2 089.1 ^(r) 2 089.1 ^(r) 2 089.1 | 612.8 762.5 762.5 612.8 | 1 838.4 |
| 33. Pan-Alberta Gas Ltd. | GL-58 (AO-3) | Monchy, Sask. | 81-11-01 84-11-01 85-11-01 86-11-01 87-11-01 | 84-10-31 85-10-31 86-10-31 87-10-31 88-10-31 | 24 928.5 18 696.4 12 464.3 6 232.1 (13 605.1) ^(s) 24 928.5 ^(s) | 8 294.4 6 220.8 4 147.2 2 073.6 ^(s) (s) | 37 324.8 |
| 34. Pan-Alberta Gas Ltd. | GL-59 (AO-3) | Kingsgate, B.C. | 80-11-01 84-11-01 85-11-01 86-11-01 87-11-01 | 84-10-31 85-10-31 86-10-31 87-10-31 88-10-31 | 7 478.6 5 608.9 3 739.3 1 869.0 7 478.6 | 2 488.3 1 866.2 1 244.2 622.1 ^(t) (t) | 13 685.7 |
| 35. TransCanada PipeLines Limited | GL-60 (AO-2) | Emerson, Man. | 80-01-01 80-11-01 84-11-01 85-11-01 | 80-10-31 84-10-31 85-10-31 85-12-14 | 6 317.1 ^(u) 6 317.1 ^(u) 4 737.8 3 158.6 | 800.0 2 096.3 1 572.2 139.0 | 10 896.4 |

G-IV (Cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1981

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM | | |
|--|-------------------------|---|--|--|--|--|----------------------------|
| | | | FROM | TO | DAILY 10^3 m^3 | ANNUAL 10^6 m^3 | TERM 10^6 m^3 |
| NATURAL GAS | | | | | | | |
| 36. Consolidated Natural Gas Limited | GL-61 (AO-4) | Emerson, Man. and Monchy, Sask. (combined maximum) | 80-11-01 84-11-01 85-11-01 86-11-01 | 84-10-31 85-10-31 86-10-31 87-10-31 | 5 665.6 4 249.2 2 832.8 1 416.4 | 2 067.9 1 551.0 1 034.0 517.0 | 11 373.6 |
| | | Maximum permitted at Monchy, Sask as part of combined Emerson/Monchy volumes. | 81-11-01 85-11-01 86-11-01 | 85-10-31 86-10-31 87-10-31 | 3 232.9 2 832.8 1 416.4 | 1 180.0 1 034.0 517.0 | (5 099.0) ^(v) |
| 37. Canadian-Montana Pipe Line Company | GO-3-79 (AO-2) | Section 1, Township 1, Range 20 West of the Meridian, Alta. | 79-05-01 | 93-12-31 | 30.0 | 10.3 | 105.0 |
| 38. Pan-Alberta Gas Ltd. | GL-62 (AO-1) | Monchy, Sask. | 84-11-01 85-11-01 86-11-01 | 85-10-31 86-10-31 87-10-31 | 6 232.1 12 464.2 5 091.3 | 2 073.6 4 147.2 1 694.0 | 7 914.8 |
| 39. Pan-Alberta Gas Ltd. | GL-63 (AO-1) | Kingsgate, B.C. | 80-11-01 83-11-01 84-11-01 85-11-01 86-11-01 | 83-10-31 84-10-31 85-10-31 86-10-31 87-10-31 | 931.5 ^(w) 1 869.7 3 739.4 5 609.0 7 478.6 | 340.0 ^(w) 622.1 1 244.2 1 866.2 2 488.3 | 6 220.8 ^(x) |
| 40. Union Gas Limited | GL-64 (AO-1) | Windsor, Ont. | 80-11-01 | 85-10-31 | 1 100.0 | 284.0 | 1 420.0 |

- (a) Notwithstanding the named point of export at Cardston, Alta., gas was allowed to be exported at Aden, Alta., provided the combined volume exported at Aden under Licences GL-5, GL-17, GL-25 and GL-36 did not exceed $2 817.5 \times 10^3 \text{ m}^3/\text{day}$ or $563.5 \times 10^6 \text{ m}^3/\text{year}$ during the period 76-05-11 to 79-12-31.
- (b) Exports of interruptible gas were authorized during the period 65-11-01 to 68-10-31 to a maximum total volume of $226.6 \times 10^6 \text{ m}^3$.
- (c) During the period 80-11-01 to 82-10-31, the Licensee is authorized to export additional volumes in excess of the daily maximum under Licences GL-18, GL-20 and GL-37, such additional volumes being subject to interruption for Canadian domestic requirements. The annual combined quantity of these interruptible volumes under the three licences should not exceed $1 983.0 \times 10^6 \text{ m}^3$ during the period 80-11-01 to 81-10-31, and $1 400.0 \times 10^6 \text{ m}^3$ during the period 81-11-01 to 82-10-31.
- (d) Notwithstanding Emerson, Manitoba as the point of export, the Licensee has been authorized to export volumes of gas at Niagara Falls, Ontario during the periods 79-10-18 to 79-12-16; and 80-06-05 to 82-10-31.
- (e) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario to serve Eastern Canadian markets.
- (f) This export actually commenced on the day when the total quantity of gas authorized by Licence GL-8 was exported (approximately June 1973).
- (g) This amendment stipulated a maximum daily quantity of $764.9 \times 10^3 \text{ m}^3$ or $12.75 \times 10^6 \text{ m}^3$ in any calendar month during the period between 74-05-14 and the commencement of exports authorized for the period 74-05-14 to 75-05-14.
- (h) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.
- (i) Notwithstanding the Huntingdon, B.C. export point, the Licensee was authorized to export gas at a place near Kingsgate, B.C. during the period from 73-11-01 to 79-10-31.
- (j) For the period 72-11-01 to 89-10-31, the Licensee is authorized to export an average annual quantity of gas of $7 970.3 \times 10^6 \text{ m}^3$ or a maximum of $8 389.8 \times 10^6 \text{ m}^3$ in any consecutive twelve-month period ending on the 31st day of October.
- (k) This licence authorizes an export near Emerson, Manitoba. The quantity of gas exported under the authority of this licence shall be equal to the quantities of gas which the licensee imports pursuant to Licence No. GLI-5.
- (l) From the date of Initial Delivery.
- (m) Twenty years and six months after the date of the First Regular Delivery or a total term from Initial Delivery not exceeding 25 years.
- (n) The total gas or equivalent quantity expressed in cubic metres of the liquefied natural gas imported pursuant to Licence GLI-7.
- (o) The quantity of gas that may be exported in any one month shall not be more than $28.3 \times 10^3 \text{ m}^3$.
- (p) The quantity of gas that may be exported in any consecutive twelve-month period ending on the 31st day of October under the authority of this licence together with the quantity of gas that may be exported under the authority of Licence GL-25 shall not exceed $206.8 \times 10^6 \text{ m}^3$.
- (q) For the six year period from 81-11-01 to 87-10-31, the Licensee is authorized to export at Monchy, Saskatchewan a maximum volume of gas of $7 648.5 \times 10^6 \text{ m}^3$.
- (r) The Licensee may exceed the daily limitation of $2 089.1 \times 10^3 \text{ m}^3/\text{d}$ during the period 80-09-25 to 82-10-31, subject to interruption of the volumes in excess of $2 089.1 \times 10^3 \text{ m}^3/\text{d}$ to provide service to TransCanada's Canadian customers.
- (s) "Additional" volumes, i.e. make-up gas equal to the difference between the authorized volume minus the actual volume exported over the 1981/82 licence year period, may be exported during 86-11-01/87-10-31 to a maximum of $13 605.1 \times 10^3 \text{ m}^3/\text{d}$ and $4 526.8 \times 10^6 \text{ m}^3/\text{a}$. Any "additional" volumes still left

G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1981

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM VOLUMES (m ³) |
|---|-----------------------------|--|--|--|--|
| | | | FROM | TO | |
| PROPANE | | | | | |
| 1. Dome Petroleum Limited | GL-31 (AO-7) | Any point on the international boundary between Canada and the United States | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 | 716 983 688 571 656 190 620 476 133 254 133 254 133 254 133 254 143 809 193 016 196 984 169 047 165 873 165 079 162 098 103 968 |
| 2. Amoco Canada Petroleum Company Limited | GL-32 (AO-5) | Any point on the international boundary between Canada and the United States | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 95-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 95-12-31 | 92 698 92 698 77 206 |
| 3. PanCanadian Gas Products Limited | GL-34 (AO-6) | Any point on the international boundary between Canada and the United States | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 | 63 730 63 730 63 730 63 730 63 730 63 730 63 730 53 175 3 968 |
| 4. Dome Petroleum Limited | GL-46 (AO-4) ^(a) | Any point on the international boundary between Canada and the United States | 78-04-01 79-04-01 80-04-01 | 79-03-31 80-03-31 81-03-31 | 619 047 601 587 547 619 |

unexported in the period 1981/82 less the 1986/87 export of "additional" volumes may be exported during the "extended" period 87-11-01/88-10-31.

"Additional" volumes authorized during 86-11-01/88-10-31 are subject to reduction depending on Canadian deliverability requirements.

- (i) For the extended period 87-11-01/88-10-31, the Licensee may export the difference between the authorized quantity during 80-11-01/81-10-31 and the actual quantity exported in such period, subject to reduction should deliverability be insufficient to meet Canadian requirements and authorized exports
- (ii) During the period ending 81-05-14, the total quantity of gas that may be exported in any one day shall not exceed the difference between $6\ 317.1 \times 10^3 m^3$ and the quantity of gas exported under Licence GL-1 on that day.
- (iii) For the six year period from 81-11-01 to 87-10-31, the Licensee is authorized to export at Monchy, Saskatchewan a maximum volume of $5\ 099.0 \times 10^6 m^3$.
- (iv) The total volume of gas exported during the period 80-11-01 to 83-10-31 shall reduce by the same amount the total term volume of gas authorized to be exported during the balance of the term of this licence (i.e. 83-11-01/87-10-31).
- (v) For the period 85-11-01/87-10-31, 1 588.0 $\times 10^6 m^3$ are conditional and could be reduced should deliverability be insufficient to meet Canadian requirements and authorized exports.

G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1981

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM VOLUMES (m ³) |
|--|----------------------------------|--|----------------------------------|----------------------------------|-----------------------------------|
| | | | FROM | TO | |
| PROPANE | | | 81-04-01 82-04-01 83-04-01 | 82-03-31 87-03-31 88-03-31 | 468 254 380 952 333 333 |
| 5. Dome Petroleum Limited | EPR-908-77 (AO-1) ^(b) | Gretna, Man. | 79-01-01 80-01-01 81-01-01 | 79-12-31 80-12-31 81-12-31 | 238 095 238 095 238 095 |
| 6. Dome Petroleum Limited | EPR-917-79 ^(c) | Any place on the international boundary between Canada and the United States | 79-09-06 | 96-01-31 | Not Specified |
| 7. Amoco Canada Petroleum Company Limited | EPR-918-79 ^(c) | Same as EPR-917-79 | 79-09-06 | 96-01-31 | Not Specified |
| 8. PanCanadian Gas products Limited | EPR-919-79 ^(c) | Same as EPR-917-79 | 79-09-06 | 91-01-31 | Not Specified |
| 9. Imperial Oil Limited | EPR-922-80 ^(b) | Gretna, Man. | 80-09-01 | 90-08-31 | Not Specified |
| 10. Amoco Canada Petroleum Company Limited | EPR-925-80 ^(d) | Sarnia, Ont. | 81-07-15 | 82-03-31 | Not Specified |
| 11. NGL Supply Limited | EPR-926-81 (AO-1) | Sarnia, Ont. | 81-11-24 | 82-02-28 | 644 |

G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1981

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM VOLUMES (m ³) |
|---|----------------------------------|--|--|--|---|
| | | | FROM | TO | |
| BUTANES | | | | | |
| 1. Dome Petroleum Limited | EBU-1-74 (AO-3) ^(a) | Any place on the international boundary between Canada and the United States | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 792 462 773 405 689,235 587 597 528 837 433 551 |
| 2. Dome Petroleum Limited | EBU-132-74 (AO-1) ^(b) | Gretna, Man. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 95-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 95-12-31 | 603 129 580 324 556 375 532 601 502 284 452 037 437 093 402 186 352 812 341 711 315 460 299 627 290 273 272 057 265 117 245 012 239 724 |
| 3. Amoco Canada Petroleum Company Limited | EBU-133-74 (AO-1) ^(b) | Gretna, Man. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 95-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 95-12-31 | 618 088 575 893 540 176 488 674 423 848 374 315 359 244 308 345 260 131 239 549 205 008 179 455 163 527 135 973 122 506 95 286 91,062 |

G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1981.

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM VOLUMES (m ³) |
|---|----------------------------------|-----------------|--|--|--|
| | | | FROM | TO | |
| BUTANES | | | | | |
| 4. PanCanadian Gas Products Limited | EBU-134-74 (AO-1) ^(b) | Gretna, Man. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 | 213 822 213 822 213 822 213 822 213 822 240 550 240 550 240 550 240 550 240 550 240 550 240 550 |
| 5. Imperial Oil Limited | EBU-911-80 ^(b) | Gretna, Man. | 80-09-01 | 90-08-31 | Not Specified |
| 6. Amoco Canada Petroleum Company Limited | EBU-915-81 ^(f) | Sarnia, Ont. | 81-07-15 | 82-03-31 | Not Specified |

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM VOLUMES (m ³) |
|---------------------------|-------------------------------|--|--|--|--|
| | | | FROM | TO | |
| ETHANE | | | | | |
| 1. Dome Petroleum Limited | GL-45 (AO-5) ^(g) | Any point on the international boundary between Canada and the United States | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 530 325 537 245 547 703 565 080 571 399 549 883 |
| 2. Dome Petroleum Limited | GL-47 (AO-4) | Elmore, Sask. and Windsor, Ont. | 78-11-01 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 | 78-12-31 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 | 835 298 2 211 664 2 195 866 2 053 688 1 563 962 1 405 986 1 184 820 458 130 |
| 3. Dome Petroleum Limited | GO-1-76 (AO-1) ^(h) | Elmore, Sask. | 78-01-01 | 85-12-31 | 3 949 m ³ /a |
| 4. Dome Petroleum Limited | GL-51 | Elmore, Sask. and Windsor, Ont. | 79-06-21 | 93-12-31 | 19 069 000 |
| 5. Dome Petroleum Limited | GO-1-81 | Elmore, Sask. | 81-03-01 | 81-12-31 | 160 000 |

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CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1981.

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM VOLUMES (kg) |
|-----------------------------------|--------------------------------|--|--------------------------|----------|----------------------|
| | | | FROM | TO | |
| ETHYLENE | | | | | |
| 1. Dow Chemical of Canada Limited | EYL-1-76 (AO-2) | Elmore, Sask. Sarnia and Windsor Ont. | 80-01-01 | 89-12-31 | 158 757 340 kg/a |
| 2. Dow Chemical of Canada Limited | EYL-2-76 (AO-1) ^(l) | Elmore, Sask. | 78-01-01 | 97-12-31 | 68 038 860 kg/a |
| 3. Esso Chemical Canada | EYL-2-79 (AO-2) | Sarnia, and Fort Erie Ont. | 79-06-25 | 82-03-31 | 18 143 700 kg |
| 4. Dow Chemical of Canada Limited | EYL-2-80 | Sarnia, Ont. | 81-01-01 | 81-12-31 | 9 000 000 kg |
| 5. Dow Chemical of Canada Limited | EYL-1-81 | Sarnia, Ont. | 82-01-01 | 82-12-31 | 9 000 000 kg |

- (a) This is an import-export licence whereby propane imported at Sarnia or Windsor may be exported at any place on the international boundary between Canada and the United States.
- (b) This order authorizes an export at Gretna, Manitoba for subsequent import at Sarnia, Ontario.
- (c) This order authorizes an export of propane at any point on the international boundary between Canada and the United States and subsequent import of the same propane within 30 days after the day of export.
- (d) This order authorizes an export at Sarnia, Ontario of propane that was previously imported in an NGL mix and fractionated at Amoco's Sarnia fractionation plant.
- (e) This order authorizes an import at Sarnia or Windsor, Ontario for subsequent export at any place on the international boundary between Canada and the United States.
- (f) This order authorizes an export at Sarnia, Ontario of butanes that were previously imported at Sarnia, Ontario in an NGL mix and fractionated at Amoco's Sarnia fractionation plant.
- (g) This licence authorizes an export at any point on the international boundary between Canada and the United States. The quantity of ethane exported under the authority of this licence shall be equal to the quantities of ethane which the licensee imports near Sarnia and Windsor, Ontario.
- (h) This order authorizes an export of ethane at Elmore, Saskatchewan for subsequent import at Windsor, Ontario.
- (i) This order authorizes an export of ethylene at Elmore, Saskatchewan for subsequent import at Windsor, Ontario.

G-V

EXPORTS OF NATURAL GAS

| Exporter and Licence/Order ^(a) | 10 ⁶ m ³ | | | | | | | | |
|--|--------------------------------|---------|---------|---------|---------|---------|------------------------|--------------------------|---|
| | Cumulative to 76-12-31 | 1977 | 1978 | 1979 | 1980 | 1981 | Cumulative to 81-12-31 | Total Authorized Exports | Remaining ^(c) Under Licences |
| 1. TransCanada PipeLines Limited GL-1 (AO-15) ^(b) | 32 739.5 | 2 048.7 | 2 012.6 | 2 065.3 | 927.7 | 148.5 | 39 942.3 | 39 942.3 | 0.0 |
| 2. Alberta & Southern Gas Co. Ltd. GL-3 (AO-16) ^(b) | 65 388.1 | 4 469.8 | 3 975.1 | 4 625.5 | 3 998.2 | 3 514.5 | 85 971.1 | 109 467.8 | 23 496.7 |
| 3. Westcoast Transmission Company Limited GL-4 (AO-17) | 19 689.7 | 1 370.6 | 1 118.3 | 1 183.4 | 1 051.7 | 928.8 | 25 342.5 | 35 250.9 | 9 908.4 |
| 4. Canadian-Montana Pipe Line Company GL-5 (AO-18) ^{(b)(d)(e)} | 4 699.4 | 220.3 | 387.1 | 408.2 | 207.9 | 255.0 | 6 178.0 | 7 832.3 | 1 654.3 |
| 5. Niagara Gas Transmission Limited GL-6 (AO-26) | 1 806.2 | 168.7 | 176.5 | 170.0 | 151.2 | 108.3 | 2 580.9 | 3 433.0 | 852.2 |
| 6. Alberta & Southern Gas Co. Ltd. GL-16 (AO-13) ^(b) | 19 870.2 | 2 226.4 | 1 931.8 | 2 181.3 | 1 666.7 | 1 367.6 | 29 244.0 | 45 721.1 | 16 477.1 |
| 7. Canadian-Montana Pipe Line Company GL-17 (AO-16) ^{(b)(d)(f)} | 1 990.4 | 318.5 | 192.0 | 190.1 | 139.8 | 124.3 | 2 955.0 | 4 652.8 | 1 697.8 |
| 8. TransCanada PipeLines Limited GL-18 (AO-26) ^(b) | 11 397.3 | 1 202.8 | 1 210.8 | 2 134.1 | 1 929.4 | 1 092.5 | 18 966.9 | 33 993.4 | 15 026.5 |
| 9. TransCanada PipeLines Limited GL-19 (AO-18) | 864.6 | 120.8 | 119.6 | 128.7 | 119.6 | 130.0 | 1 483.3 | 3 059.4 | 1 576.1 |
| 10. TransCanada PipeLines Limited GL-20 (AO-28) ^(b) | 7 031.0 | 907.3 | 904.2 | 994.4 | 889.6 | 860.1 | 11 586.6 | 21 670.8 | 10 084.2 |
| 11. TransCanada PipeLines Limited GL-21 (AO-7) ^(h) | 48 840.4 | 5 964.2 | 6 013.8 | 5 608.2 | 5 314.5 | 5 882.8 | 77 623.9 | 169 967.0 | 92 343.1 |
| 12. Alberta & Southern Gas Co. Ltd. GL-24 (AO-15) ^(b) | 16 169.9 | 2 382.4 | 2 205.8 | 2 138.2 | 1 699.3 | 1 352.4 | 25 948.0 | 52 177.0 | 26 229.0 |
| 13. Canadian-Montana Pipe Line Company GL-25 (AO-19) ^{(b)(d)} | 2 998.0 | 198.5 | 144.6 | 146.3 | 21.0 | 5.2 | 3 513.6 | 4 890.8 | 1 377.2 |
| 14. ICG Transmission Limited GL-28 (AO-15) ^(b) | 41.9 | 8.8 | 9.6 | 12.1 | 8.9 | 7.9 | 89.2 | 229.0 | 139.8 |
| 15. ICG Transmission Limited GL-29 (AO-16) | 1 257.4 | 197.1 | 180.4 | 176.6 | 160.6 | 149.7 | 2 121.7 | 5 462.2 | 3 340.4 |
| 16. ICG Transmission Limited GL-30 (AO-3) ⁽ⁱ⁾ | 1 764.9 | 310.7 | 291.2 | 290.2 | 278.2 | 252.2 | 3 187.5 | 8 498.1 | 5 310.6 |

G-V (cont'd)

EXPORTS OF NATURAL GAS

| Exporter and Licence/Order ^(a) | ^{10⁶ m³} | | | | | | | | |
|---|---|---------|---------|---------|---------|---------|------------------------------|--------------------------------|---|
| | Cumulative to 76-12-31 | 1977 | 1978 | 1979 | 1980 | 1981 | Cumulative to 81-12-31 | Total Authorized Exports | Remaining ^(c) Under Licences |
| 17. Alberta & Southern Gas Co. Ltd. GL-35 (AO-13) ^(b) | 11 613.7 | 1 972.0 | 1 662.1 | 2 089.5 | 1 556.8 | 1 166.7 | 20 060.8 | 30 116.1 | 10 055.4 |
| 18. Canadian-Montana Pipe Line Company GL-36 (AO-14) ^(d) | 635.9 | 73.4 | 72.3 | 73.2 | 75.1 | 122.8 | 1 052.8 | 1 628.5 | 575.7 |
| 19. TransCanada PipeLines Limited GL-37 (AO-21) ^(b) | 12 416.3 | 2 027.9 | 2 021.1 | 2 112.5 | 1 769.8 | 1 760.7 | 22 108.4 | 40 601.0 | 18 492.6 |
| 20. TransCanada PipeLines Limited GL-38 (AO-13) | 3 170.8 | 517.0 | 517.0 | 517.0 | 383.0 | 373.0 | 5 477.8 | 10 368.0 | 4 890.2 |
| 21. TransCanada PipeLines Limited GL-39 (AO-13) | 458.0 | 74.4 | 74.4 | 74.5 | 60.6 | 49.5 | 791.5 | 1 493.0 | 701.5 |
| 22. Westcoast Transmission Company Limited GL-41 (AO-24) ⁽ⁱ⁾ | 35 008.7 | 6 630.8 | 5 936.9 | 6 713.9 | 4 376.3 | 3 805.1 | 62 471.7 | 142 853.3 | 80 381.6 |
| 23. TransCanada PipeLines Limited GL-42 (AO-3) ^(h) | 12 013.1 | 2 219.7 | 2 238.2 | 2 087.2 | 1 977.9 | 2 189.4 | 22 725.6 | 60 316.5 | 37 591.0 |
| 24. TransCanada PipeLines Limited GL-43 (AO-19) | 1 122.2 | 82.2 | 108.7 | 22.8 | — | — | 1 335.8 | 9 631.5 | 8 295.7 |
| 25. Consolidated Natural Gas Limited GL-44 ^(k) | 2 280.0 | 380.7 | 372.3 | 515.9 | 420.7 | 370.2 | 4 339.7 | 18 951.3 | 14 611.6 |
| 26. Canadian-Montana Pipe Line Company GL-52 (AO-2) | — | — | — | — | 189.3 | 83.8 | 273.0 | 1 841.4 | 1 568.4 |
| 27. Columbia Gas Development of Canada Ltd. GL-54 (AO-3) | — | — | — | — | — | — | — | 2 394.0 | 2 394.0 |
| 28. Niagara Gas Transmission Limited GL-55 (AO-2) | — | — | — | — | 31.9 | 71.4 | 103.3 | 717.5 | 614.2 |
| 29. ProGas Limited GL-56 (AO-3) | — | — | — | — | — | 668.0 | 668.0 | 17 050.0 | 16 382.0 |
| 30. Sulpetro Limited GL-57 (AO-5) ^(b) | — | — | — | — | 238.1 | 581.2 | 819.3 | 1 838.4 | 1 019.1 |
| 31. Pan-Alberta Gas Ltd. GL-58 (AO-3) | — | — | — | — | — | — | — | 37 324.8 | 37 324.8 |
| 32. Pan-Alberta Gas Ltd. GL-59 (AO-3) | — | — | — | — | — | 280.0 | 280.0 | 13 685.7 | 13 405.7 |
| 33. TransCanada PipeLines Limited GL-60 (AO-2) | — | — | — | — | 800.0 | 1 573.9 | 2 373.9 | 10 896.4 | 8 522.5 |
| 34. Consolidated Natural Gas Limited GL-61 (AO-4) | — | — | — | — | 103.8 | 707.1 | 810.9 | 11 373.6 | 10 562.7 |

G-V (cont'd)

EXPORTS OF NATURAL GAS

| Exporter and Licence/Order ^(a) | 10^6 m^3 | | | | | | | | |
|--|------------------------|----------|----------|------------|----------|----------|------------------------|--------------------------|---|
| | Cumulative to 76-12-31 | 1977 | 1978 | 1979 | 1980 | 1981 | Cumulative to 81-12-31 | Total Authorized Exports | Remaining ^(c) Under Licences |
| 35. Pan-Alberta Gas Ltd. GL-63 (AO-1) | — | — | — | — | — | — | — | 6 220.8 | 6 220.8 |
| 36. Union Gas Limited GL-64 (AO-1) | — | — | — | — | 6.7 | 296.1 | 302.8 | 1 420.0 | 1 117.2 |
| 37. Western Decalta Petroleum (1977) Limited MO-49-75 (AO-6) | — | — | — | — | — | — | — | N/S | — |
| 38. Canadian-Montana Pipe Line Company GO-3-79 (AO-2) | — | — | — | — | — | — | — | 105.0 | 105.0 |
| 39. Gaz Métropolitain, inc. GO-4-80 (AO-1) ^(l) | — | — | — | — | — | — | — | 13.3 | 11.6 |
| 40. Gas Métropolitain, inc. GO-2-81 ^(m) | — | — | — | — | — | — | — | 0.1 | — |
| Gross Exports ⁽ⁿ⁾ | 315 267.6 | 36 093.7 | 33 876.4 | 36 659.3 | 30 554.2 | 30 278.5 | 482 729.7 | | |
| Deduct Re-Exports of Imports: | | | | | | | | | |
| Item 25, GL-44 ^(k) | 2 280.0 | 380.7 | 372.3 | 515.9 | 420.7 | 370.2 | 4 339.7 | | |
| Deduct Exports for Re-Imports: | | | | | | | | | |
| Item 11, GL-21 ^(h) | 48 840.4 | 5 964.2 | 6 013.8 | 5 608.2 | 5 314.5 | 5 882.8 | 77 623.9 | | |
| Item 16, GL-30 ^(l) | 1 764.9 | 310.7 | 291.2 | 290.2 | 278.2 | 252.2 | 3 187.5 | | |
| Item 23, GL-42 ^(h) | 12 013.1 | 2 219.7 | 2 238.2 | ** 2 087.2 | 1 977.9 | 2 189.4 | 22 725.6 | | |
| Net Exports | 250 369.2 | 27 218.5 | 24 960.9 | 28 157.7 | 22 562.9 | 21 583.9 | 374 853.0 | | |

- (a) For information on the term, point of export, and maximum authorized volumes under each licence and order, please see Appendix G-IV.
- (b) Licences which show actual exports which exceeded the annual maximum were operating under make-up conditions which permitted the recovery of accumulated shortfalls in previous periods, and which permitted tolerance and/or temporary operating allowances.
- (c) It may not be possible to export volumes remaining under these licences due to restrictions on peak day and annual volumes.
- (d) Licences GL-5, GL-17, GL-25 and GL-36 authorized the licence volumes to be exported at Aden, Alberta (in addition to Cardston, Alberta) under the four licences combined, to a maximum of $2 817.5 \times 10^6 \text{ m}^3/\text{d}$, or $563.5 \times 10^6 \text{ m}^3/\text{a}$ for any consecutive 12-month period ending on October 31st during the period 1976-05-11 to 1979-12-31.
- (e) This licence authorized an additional $84 983.5 \times 10^3 \text{ m}^3/\text{a}$ for any consecutive 12-month period commencing on May 14th, during the period 1977-05-14 to 1979-12-31.
- (f) This licence authorized an additional $56 655.7 \times 10^3 \text{ m}^3/\text{a}$ for any consecutive 12-month period commencing on May 14th, during the period 1977-05-14 to 1979-12-31.
- (g) Interruptible.
- (h) This is an export at Emerson, Manitoba for re-import at Sault Ste. Marie and Sarnia, Ontario to serve the Eastern Canadian market.
- (i) On the day that the first delivery of gas was made under Licence GL-41, Licences PC1955-958, GL-23 and GL-40 were revoked.
- (j) This is an export at Sprague, Manitoba for re-import at Rainy River, Ontario.
- (k) This is a re-export at Emerson, Manitoba of the volumes imported under Licence GLI-5 at Willow Creek, Saskatchewan.
- (l) This Order authorizes the export of the gas equivalent at 37.47 MJ/m^3 of $17 533 \text{ m}^3$ LNG imported under Order GO-3-80.
- (m) This Order authorizes the export of 3 500 gigajoules of liquefied natural gas.
- (n) The Gross Exports shown are the total for subsisting licences and orders. For volumes exported under expired licences and orders, please see the 1980 Annual Report of the National Energy Board.
- Figures may not total due to rounding.
- Amount too small to be expressed.
- N/S Not stated
- N/A Not applicable.

G-VI

NEW LICENCES AND ORDERS TO IMPORT NATURAL GAS IN 1981

| TYPE OF LICENCE OR ORDER | IMPORTER | ORDER NUMBER | POINT OF IMPORT | TERM OF ORDER | | MAXIMUM |
|-----------------------------|----------|-----------------|--------------------|------------------|----|---------|
| | | | | FROM | TO | |
| (a) | | | | | | |

(a) No new licences or orders to import natural gas were issued in 1981.

G-VII

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, BUTANES, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1981.

| IMPORTER | LICENCE OR ORDER NUMBER | POINT OF IMPORT | TERM OF LICENCE OR ORDER | | MAXIMUM IMPORT VOLUME | | |
|---|----------------------------|-------------------------------------|-----------------------------|----------------------|---|--|--|
| | | | FROM | TO | DAILY 10 ³ m ³ | ANNUAL 10 ⁶ m ³ | TERM 10 ⁶ m ³ |
| Natural Gas | | | | | | | |
| 1. TransCanada PipeLines Limited | GL-21(AO-7) ^(a) | Sault Ste-Marie and Sarnia, Ont. | 68-11-05 | 91-10-31 | N/S | 7 019.1 | 169 967.0 |
| 2. ICG Transmission Limited | GL-30(AO-3) ^(b) | Rainy River, Ont. | 70-11-01 | 95-10-31 | 1 321.8 | 344.0 | 8 498.1 |
| 3. TransCanada PipeLines Limited | GL-42(AO-3) ^(a) | Sault Ste-Marie and Sarnia, Ont. | 71-04-15 71-11-01 | 71-10-31 94-10-21 | N/S N/S | 232.2 2 612.3 | 60 316.5 |
| 4. Consolidated Natural Gas Limited | GLI-5(AO-2) | Willow Creek, Sask. | 72-03-15 | 92-10-31 | 4 249.2 | 1 274.8 | 18 951.3 |
| 5. Tenneco LNG Inc. | GLI-7 | Saint John, N.B. | (c) | (d) | N/S | 4 18.68PJ | 8 373.6PJ |
| 6. Border Utilities Limited | GO-2-66(AO-2) | Coutts, Alta. | 66-06-02 | 85-09-14 | 30.0 | N/S | N/S |
| 7. Canadian Western Natural Gas Company Limited | GO-6-66(AO-3) | Coutts, Alta. | 66-09-22 | 85-09-14 | 30.0 | N/S | N/S |

G-VII (Cont'd)

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, BUTANES, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1981.

| IMPORTER | LICENCE OR ORDER NUMBER | POINT OF IMPORT | TERM OF LICENCE OR ORDER | | MAXIMUM IMPORT VOLUME (m ³) |
|---------------------------|---------------------------------|-------------------------------|--|--|---|
| | | | FROM | TO | |
| Propane | | | | | |
| 1. Dome Petroleum Limited | GL-46(AO-4) ^(e) | Sarnia, Ont. Windsor, Ont. | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 619 047 601 587 547 619 468 254 380 952 333 333 |
| Butanes | | | | | |
| 1. Dome Petroleum Limited | EBU-1-74(AO-3) ^(f) | Sarnia, Ont. Windsor, Ont. | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 792 462 773 405 689 235 587 597 528 837 433 551 |
| 2. Dome Petroleum Limited | EBU-132-74(AO-1) ^(g) | Sarnia, Ont. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 95-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 95-12-31 | 603 129 580 324 556 375 532 601 502 284 452 037 437 093 402 186 352 812 341 711 315 460 299 627 290 273 272 057 265 117 245 012 239 724 |

G-VII (Cont'd)

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, BUTANES, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1981

| IMPORTER | LICENCE OR ORDER NUMBER | POINT OF IMPORT | TERM OF LICENCE OR ORDER | | MAXIMUM IMPORT VOLUME (m ³) |
|---|---------------------------------|-----------------|--|--|---|
| | | | FROM | TO | |
| Butanes | | | | | |
| 3. Amoco Canada Petroleum Company Limited | EBU-133-74(AO-1) ^(g) | Sarnia, Ont. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 95-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 95-12-31 | 618 088 575 893 540 176 488 674 423 848 374 315 359 244 308 345 260 131 239 549 205 008 179 455 163 527 135 973 122 506 95 286 91 062 |
| 4. PanCanadian Gas Products Ltd. | EBU-134-74(AO-1) ^(g) | Sarnia, Ont. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 | 213 822 213 822 213 822 213 822 213 822 240 550 240 550 240 550 240 550 240 550 240 550 240 550 |

G-VII (Cont'd)

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, BUTANES, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1981

| IMPORTER | LICENCE OR ORDER NUMBER | POINT OF IMPORT | TERM OF LICENCE OR ORDER | | MAXIMUM IMPORT VOLUME (m ³) |
|-----------------------------------|-------------------------------|-----------------------------------|--|--|--|
| | | | FROM | TO | |
| Ethane | | | | | |
| 1. Dome Petroleum Limited | GL-45(AO-5) ^(h) | Sarnia, Ont. and Windsor, Ont. | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 530 325 537 245 547 703 565 080 571 399 549 883 |
| 2. Dome Petroleum Limited | GO-1-76(AO-1) ⁽ⁱ⁾ | Windsor, Ont. | 78-01-01 | 85-12-31 | 3 949 m ³ /a |
| Ethylene | | | | | |
| 1. Dow Chemical of Canada Limited | EYL-2-76(AO-1) ^(j) | Windsor, Ont. | 78-01-01 | 97-12-31 | 68 038 860 kg/a |

- (a) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market.
- (b) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.
- (c) From the date of Initial Delivery.
- (d) Twenty years and six months after the date of First Regular Delivery and not exceeding 25 years.
- (e) This is an import-export licence whereby propane imported at Sarnia or Windsor may be exported at any place on the international boundary between Canada and the United States in the Province of Ontario.
- (f) This order authorizes an import at Sarnia or Windsor, Ontario for subsequent export at any point on the international boundary between Canada and the United States.
- (g) This order authorizes an export at Gretna, Manitoba for subsequent import at Sarnia, Ontario.
- (h) This licence authorizes an export at any point on the international boundary between Canada and the United States. The quantity of ethane exported under the authority of this licence shall be equal to the quantities of ethane which the licensee imports near Sarnia and Windsor, Ontario.
- (i) This order authorizes an export of ethane at Elmore, Saskatchewan for subsequent import at Windsor, Ontario.
- (j) This order authorizes an export of ethylene at Elmore, Saskatchewan for subsequent import at Windsor, Ontario.

N/S Not specified
 N/A Not applicable

G-VIII

IMPORTS OF NATURAL GAS

| Importer and Licence/Order ^(a) | 10 ⁶ m ³ | | | | | | | | | |
|--|--------------------------------|---------|---------|---------|---------|---------|------------------------|--------------------------|---|--|
| | Cumulative to 76-12-31 | 1977 | 1978 | 1979 | 1980 | 1981 | Cumulative to 81-12-31 | Total Authorized Imports | Remaining ^(b) Under Licences | |
| 1. Border Utilities Ltd. GO-2-66 (AO-2) | 10.3 | 0.8 | 1.0 | 0.9 | 0.8 | 0.8 | 14.6 | N/S | — | |
| 2. Canadian Western Natural Gas Company Ltd. GO-6-66 (AO-3) | 17.7 | — | 1.0 | 1.2 | 2.4 | 2.2 | 24.5 | N/S | — | |
| 3. Consolidated Natural Gas Limited GLI-5 (AO-2) ^(c) | 2 304.8 | 392.3 | 380.9 | 528.9 | 423.2 | 376.2 | 4 406.2 | 18 951.3 | 14 545.1 | |
| 4. TransCanada PipeLines Limited GL-21 (AO-7) ^(d) | 48 840.4 | 5 964.2 | 6 013.8 | 5 602.7 | 5 288.5 | 5 851.8 | 77 561.4 | 169 967.0 | 92 405.6 | |
| 5. ICG Transmission Limited GL-30 (AO-3) ^(e) | 1 764.9 | 310.7 | 291.2 | 290.2 | 278.2 | 252.2 | 3 187.5 | 8 498.1 | 5 510.6 | |
| 6. TransCanada PipeLines Limited GL-42 (AO-3) ^(d) | 12 013.1 | 2 219.7 | 2 238.2 | 2 085.2 | 1 968.3 | 2 177.9 | 22 702.3 | 60 316.5 | 37 614.2 | |
| 7. Gaz Métropolitain, inc. GO-3-80 | — | — | — | — | 0.7 | 0.9 | 1.6 | 13.3 ^(f) | — | |
| Gross Imports ^(g) | 64 951.2 | 8 887.7 | 8 926.0 | 8 509.1 | 7 962.1 | 8 662.0 | 107 898.1 | — | — | |
| Deduct Imports for Re-Exports: | | | | | | | | | | |
| Item 3, GLI-5 ^(c) | 2 304.8 | 392.3 | 380.9 | 528.9 | 423.2 | 376.2 | 4 406.2 | — | — | |
| Item 7, GO-3-80 | — | — | — | — | 0.7 | 0.9 | 1.6 | — | — | |
| Deduct Re-Imports of Exports: | | | | | | | | | | |
| Item 4, GL-21 ^(d) | 48 840.4 | 5 964.2 | 6 013.8 | 5 602.7 | 5 288.5 | 5 851.8 | 77 561.4 | — | — | |
| Item 5, GL-30 ^(e) | 1 764.9 | 310.7 | 291.2 | 290.2 | 278.2 | 252.2 | 3 187.5 | — | — | |
| Item 6, GL-42 ^(d) | 12 013.1 | 2 219.7 | 2 238.2 | 2 085.2 | 1 968.3 | 2 177.9 | 22 702.3 | — | — | |
| Net Imports | 28.0 | 0.9 | 1.9 | 2.1 | 3.2 | 3.0 | 39.0 | — | — | |

(a) For information on the term, point of import and maximum authorized volumes under each licence and order, please see Appendix G-VII.

(b) It may not be possible to import total volumes remaining under licences due to restrictions on peak day and annual volumes.

(c) The quantities of gas authorized for import by this licence near Willow Creek, Saskatchewan, are authorized to be exported at Emerson, Manitoba pursuant to Licence GL-44.

(d) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie, Ontario, to serve the Eastern Canadian market.

(e) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

(f) This Order authorizes the import of liquid volumes of 17 533 m³ at Philipsburg, Québec for re-export at Niagara Falls, Ontario, (13 326.0 10³m³ at 37.47 MJ/m³ gas equivalent).

(g) The Gross Imports shown are the total for subsisting licences and orders. For volumes imported under expired licences and orders, please see the [1980 Annual Report](#) of the National Energy Board.

Figures may not total due to rounding.

N/S Not specified

N/A Not applicable

— Amount too small to be expressed.

G-IX

EXPORTS OF PROPANE, BUTANES, ETHANE AND ETHYLENE UNDER LONG TERM LICENCES AND ORDERS*—1981.

(VOLUME IN CUBIC METRES)

| EXPORTER | LICENCE OR ORDER NUMBER | PERIOD | | AUTHORIZED MAXIMUM EXPORT QUANTITY IN PERIOD | EXPORTS IN 1981 (Preliminary) |
|--|-------------------------|----------|----------|--|-------------------------------|
| | | FROM | TO | | |
| <u>A. PROPANE</u> | | | | | |
| 1. Dome Petroleum Limited | GL-31 (AO-7) | 81-01-01 | 81-12-31 | 656 190 | 656 190 |
| 2. Amoco Canada Petroleum Company Limited | GL-32 (AO-5) | 81-01-01 | 81-12-31 | 92 698 | 92 698 |
| 3. PanCanadian Gas Products Limited | GL-34 (AO-6) | 81-01-01 | 81-12-31 | 63 730 | — |
| 4. Dome Petroleum Limited | GL-46 (AO-4) | 81-04-01 | 82-03-31 | 468 254 | 324 617 |
| 5. Dome Petroleum Limited | EPR-908-77 (AO-1) | 81-01-01 | 81-12-31 | 238 095 | — |
| 6. Dome Petroleum Limited | EPR-917-79 | 81-01-01 | 81-12-31 | N/A | 729 595 |
| 7. Amoco Canada Petroleum Company Limited | EPR-918-79 | 81-01-01 | 81-12-31 | N/A | 541 686 |
| 8. PanCanadian Gas Products Limited | EPR-919-79 | 81-01-01 | 81-12-31 | N/A | 240 834 |
| 9. Imperial Oil Limited | EPR-922-80 | 81-09-01 | 81-12-31 | N/A | 397 007 |
| 10. Amoco Canada Petroleum Company Limited | EPR-924-81 | 81-07-01 | 81-10-31 | N/A | — |
| 11. Amoco Canada Petroleum Company Limited | EPR-925-81 | 81-07-15 | 81-12-31 | N/A | — |
| 12. NGL Supply Limited | EPR-926-81 | 81-11-24 | 81-12-31 | 644 | 212 |
| <u>B. BUTANES</u> | | | | | |
| 1. Dome Petroleum Limited | EBU-1-74 (AO-3) | 81-04-01 | 82-03-31 | 587 597 | 295 304 |
| 2. Dome Petroleum Limited | EBU-132-74 (AO-1) | 81-01-01 | 81-12-31 | 556 375 | 363 484 |
| 3. Amoco Canada Petroleum Company Limited | EBU-133-74 (AO-1) | 81-01-01 | 81-12-31 | 540 176 | 424 496 |
| 4. PanCanadian Gas Products Limited | EBU-134-74 (AO-1) | 81-01-01 | 81-12-31 | 213 822 | 129 720 |
| 5. Imperial Oil Limited | EBU-911-80 | 81-01-01 | 81-12-31 | N/A | 234 763 |
| 6. Dome Petroleum Limited | EBU-913-81 | 81-04-01 | 81-09-30 | N/A | — |
| 7. Amoco Canada Petroleum Company Limited | EBU-914-81 | 81-07-01 | 81-10-31 | N/A | — |
| 8. Amoco Canada Petroleum Company Limited | EBU-915-81 | 81-07-15 | 81-12-31 | N/A | — |

G-IX (cont'd)

EXPORTS OF PROPANE, BUTANES, ETHANE AND ETHYLENE UNDER LONG TERM LICENCES AND ORDERS*—1981

(VOLUME IN CUBIC METRES)

| EXPORTER | LICENCE OR ORDER NUMBER | PERIOD | | AUTHORIZED MAXIMUM EXPORT QUANTITY IN PERIOD | EXPORTS IN 1981 (Preliminary) |
|-----------------------------------|-------------------------|----------|----------|--|-------------------------------|
| | | FROM | TO | | |
| C. ETHANE | | | | | |
| 1. Dome Petroleum Limited | GL-45 (AO-5) | 81-04-01 | 82-03-31 | 565 080 | 350 827 |
| 2. Dome Petroleum Limited | GL-47 (AO-4) | 81-01-01 | 81-12-31 | 2 053 688 | 1 831 818 |
| 3. Dome Petroleum Limited | GO-1-76 (AO-1) | 81-01-01 | 81-12-31 | 3 949 | — |
| 4. Dome Petroleum Limited | GL-51 | 81-01-01 | 81-12-31 | 935 000 | 934 951 |
| D. ETHYLENE | | | | | |
| 1. Dow Chemical Canada Limited | EYL-1-76 (AO-2) | 81-01-01 | 81-12-31 | 158 757 340kg | 74 945 478kg |
| 2. Dow Chemical of Canada Limited | EYL-2-76 (AO-1) | 81-01-01 | 81-12-31 | 68 038 860kg | 68 000 000kg |
| 3. Dow Chemical of Canada Limited | EYL-2-80 | 81-01-01 | 81-12-31 | 9 000 000kg | 2 686 285kg |
| 4. Imperial Oil Limited | EYL-2-79 (AO-2) | 81-04-01 | 82-03-31 | 9 071 850kg | 2 678 960kg |

* See Appendix G-IV for particulars.

G-X

IMPORTS OF PROPANE, BUTANES, ETHANE AND ETHYLENE UNDER LONG TERM LICENCES AND ORDERS*—1981

(VOLUME IN CUBIC METRES)

| IMPORTER | LICENCE OR ORDER NUMBER | PERIOD | | AUTHORIZED MAXIMUM IMPORT QUANTITY IN PERIOD | IMPORTS IN 1981 (Preliminary) |
|---|-------------------------|----------|----------|--|-------------------------------|
| | | FROM | TO | | |
| <u>A. PROPANE</u> | | | | | |
| 1. Dome Petroleum Limited | GL-46 (AO-3) | 81-04-01 | 82-03-31 | 468 254 | 305 737 |
| 2. Dome Petroleum Limited | EPR-908-77 (AO-1) | 81-01-01 | 81-12-31 | 238 095 | — |
| 3. Dome Petroleum Limited | EPR-917-79 | 81-01-01 | 81-12-31 | N/A | 718 179 |
| 4. Amoco Canada Petroleum Company Limited | EPR-918-79 | 81-01-01 | 81-12-31 | N/A | 551 943 |
| 5. PanCanadian Gas Products Limited | EPR-919-79 | 81-01-01 | 81-12-31 | N/A | 240 834 |
| 6. Imperial Oil Limited | EPR-922-80 | 81-09-01 | 81-12-31 | N/A | 380 116 |
| 7. Amoco Canada Petroleum Company Limited | EPR-924-81 | 81-07-01 | 81-10-31 | N/A | — |
| 8. Amoco Canada Petroleum Company Limited | EPR-925-81 | 81-07-15 | 81-12-31 | N/A | — |
| 9. NGL Supply Limited | EPR-926-81 (AO-1) | 81-11-24 | 82-02-28 | 644 | 644 |
| <u>B. BUTANES</u> | | | | | |
| 1. Dome Petroleum Limited | EBU-1-74 (AO-3) | 81-04-01 | 82-03-31 | 587 597 | 221 179 |
| 2. Dome Petroleum Limited | EBU-132-74 (AO-1) | 81-01-01 | 81-12-31 | 556 375 | 345 893 |
| 3. Amoco Canada Petroleum Company Limited | EBU-133-74 (AO-1) | 81-01-01 | 81-12-31 | 540 176 | 314 669 |
| 4. PanCanadian Gas Products Limited | EBU-134-74 (AO-1) | 81-01-01 | 81-12-31 | 213 822 | 129 720 |
| 5. Imperial Oil Limited | EBU-911-80 | 81-01-01 | 81-12-31 | N/A | 225 405 |
| 6. Dome Petroleum Limited | EBU-913-81 | 81-04-01 | 81-09-30 | N/A | — |
| 7. Amoco Canada Petroleum Company Limited | EBU-914-81 | 81-07-01 | 81-10-31 | N/A | — |
| 8. Amoco Canada Petroleum Company Limited | EBU-915-81 | 81-07-15 | 81-12-31 | N/A | — |
| <u>C. ETHANE</u> | | | | | |
| 1. Dome Petroleum Limited | GL-45 (AO-5) | 81-04-01 | 82-03-31 | 565 080 | 341 012 |
| 2. Dome Petroleum Limited | GO-1-76 (AO-1) | 81-01-01 | 81-12-31 | 3 949 | — |
| <u>D. ETHYLENE</u> | | | | | |
| 1. Dow Chemical of Canada Limited | EYL-1-76 (AO-2) | 81-01-01 | 81-12-31 | 158 757 340kg | 74 945 478kg |
| 2. Dow Chemical of Canada Limited | EYL-2-76 (AO-1) | 81-01-01 | 81-12-31 | 68 038 860kg | 68 000 000kg |

* See Appendix G-VII for particulars.

G-XI

NET EXPORTS OF PROPANE AND BUTANES

A) PROPANE (Volume in cubic metres)

| EXPORTER | 1979 | 1980 | 1981 (Preliminary) |
|--|-----------|-----------|-----------------------|
| Atlantic Speedy Propane Ltd.(g) | — | 13 | 74 |
| Amoco Canada Petroleum Co. Ltd. | 615 813 | 431 601 | 399 744 |
| Big Horn Supply Ltd. | 35 737 | 33 284 | 29 136 |
| B.P. Canada Inc.(f) | — | — | 1 532 |
| Burnwell Gas of Canada Ltd. | 28 389 | 34 960 | 35 442 |
| Canadian Enterprise Gas Products Ltd. | 102 576 | 75 006 | 52 011 |
| Canadian Superior Oil Ltd. | 118 757 | 100 109 | 53 062 |
| Can-Am Liquids Corp. Ltd.(a) | — | 1 186 | 10 282 |
| Chevron Standard Ltd. | 333 531 | 248 699 | 219 330 |
| Cigas Products Ltd. | 12 104 | 959 | — |
| C.W. Gas Ltd. | 41 | — | — |
| Dalco Petroleum Ltd.(b) | 25 408 | 14 649 | 17 350 |
| Dillingham Corporation Canada Ltd.(c) | 91 084 | 56 525 | 23 665 |
| Dome Petroleum Limited | 913 839 | 817 063 | 695 511 |
| Elgin Petroleum Limited | 3 259 | 6 232 | 7 289 |
| Esso Resources Canada Limited | 436 980 | 428 100 | 390 653 |
| Gasbex Inc. | 37 847 | 56 789 | 36 344 |
| Gas Supply (Minneapolis) Ltd. | 32 376 | 3 138 | 454 |
| Gulf Canada Products Company | 519 585 | 516 727 | 427 765 |
| Home Oil Company Limited | 87 133 | 69 920 | 58 841 |
| Hudson's Bay Oil and Gas Company Limited | 75 522 | 60 859 | 55 861 |
| ICG Canadian Propane Gas & Oil Ltd.(d) | 4 646 | 1 197 | 356 |
| Irving Oil Company | 11 914 | 11 965 | — |
| Koch Hydrocarbons Canada | 8 172 | 5 232 | 1 227 |
| Mobil Oil Canada Ltd. | 94 991 | 117 886 | 71 101 |
| N.G.L. Supply Ltd. | 75 903 | 35 277 | 14 719 |
| Northern Petro Products Ltd. | 2 939 | 1 305 | 1 802 |
| Northern Raymond Oil Co. Ltd. | 6 310 | 4 974 | — |
| PanCanadian Gas Products Ltd. | 225 399 | 181 065 | 186 378 |
| Petro-Canada Exploration Inc.(e) | 267 463 | 257 640 | 281 711 |
| Petrosol International Ltd. | 13 177 | 7 146 | — |
| Real International Marketing Ltd. | 1 192 | 1 741 | 11 054 |
| G.W. Sample Enterprises | 693 | — | — |
| Shell Canada Resources Limited | 167 205 | 153 077 | 142 139 |
| Stephens Energy Limited | 5 299 | 37 290 | 68 402 |
| Stillings Canada Petroleum Company | 98 562 | 69 804 | 92 713 |
| Suncor Inc.(g) | — | 1 825 | — |
| Texaco Canada Inc. | 68 657 | 118 244 | 152 746 |
| Union Oil Co. of Canada Ltd. | 33 501 | 29 567 | 32 405 |
| Union Texas of Canada Ltd. | 57 697 | 58 484 | 56 172 |
| TOTALS | 4 613 701 | 4 049 538 | 3 627 271 |

(a) This company started exporting in July 1980.

(b) Prior to September 1979, exports were listed under the name of M-P Petroleum Ltd.

(c) Prior to July 1980, exports were listed under the name of Canmore Oil and Gas Limited.

(d) Prior to January 1980, exports were listed under the name of Canadian Propane Gas & Oil Ltd.

(e) Prior to October 1979, exports were listed under the name of Pacific Petroleums Ltd.

(f) This company started exporting in August 1981.

(g) This company started exporting in November 1980.

G-XI (cont'd)

NET EXPORTS OF PROPANE AND BUTANES

B) BUTANES (Volume in cubic metres)

| EXPORTER | 1979 | 1980 | 1981 (Preliminary) |
|--|------------------|------------------|-----------------------|
| Amoco Canada Petroleum Co. Ltd. | 470 883 | 323 693 | 395 339 |
| Belgo Canada Manufacturing Co. Ltd. | 4 | 3 | — |
| Big Horn Supply Ltd. | 23 471 | 18 687 | 16 599 |
| Canada Cities Service, Ltd. | 1 419 | — | — |
| Canadian Enterprise Gas Products Ltd. | 34 246 | 34 634 | 36 348 |
| Canadian Superior Oil Ltd. | 56 310 | 32 088 | 86 983 |
| Can-Am Liquids Corp. Ltd. ^(a) | — | 7 655 | 6 218 |
| Chevron Standard Ltd. | 12 942 | 6 136 | 5 640 |
| Cigas Products Ltd. | 4 269 | — | — |
| Dalco Petroleum Ltd. ^(b) | 38 156 | 25 271 | 18 380 |
| Dillingham Corp. Canada Ltd. ^(c) | 11 511 | — | — |
| Dome Petroleum Limited | 420 076 | 372 093 | 461 599 |
| Elgin Petroleum Limited | 31 684 | 20 262 | 8 608 |
| Esso Resources Canada Limited | 122 221 | 94 738 | 130 732 |
| Gas Supply (Minn.) Ltd. | | | 117 |
| Home Oil Company Limited | 103 442 | 65 952 | 107 763 |
| Hudson's Bay Oil and Gas Company Limited | 276 608 | 249 024 | 237 785 |
| Husky Oil Operations Ltd. | 5 316 | 5 603 | 6 125 |
| Koch Hydrocarbons Canada | 203 487 | 209 204 | 183 599 |
| Mobil Oil Canada Ltd. | 86 407 | 90 780 | 33 559 |
| Murphy Oil Company Ltd. | 14 062 | 12 048 | 8 507 |
| N.G.L. Supply Ltd. | 67 066 | 46 165 | 50 167 |
| Northern Petro Products Ltd. | 1 965 | 5 475 | 15 449 |
| Northern Raymond Oil Co. Ltd. | 3 012 | 2 180 | 493 |
| PanCanadian Gas Products Ltd. | 40 356 | 47 715 | 61 769 |
| Petro-Canada Exploration Inc. ^(d) | 96 152 | 81 157 | 92 386 |
| Petrosol International Ltd. | 101 631 | 43 398 | 17 695 |
| Real International Marketing Ltd. ^(f) | — | 2 126 | 9 236 |
| G.W. Sample Enterprises | 599 | 714 | — |
| Shell Canada Resources Limited | 214 841 | 145 274 | 168 437 |
| Stephens Energy Limited | 4 734 | 51 245 | 112 770 |
| Stillings Canada Petroleum Company | 132 348 | 160 945 | 140 784 |
| Suncor Inc. ^(e) | 34 860 | — | — |
| Texaco Canada Inc. | 101 206 | 113 517 | 129 012 |
| Union Oil Co. of Canada Ltd. | 10 387 | 25 887 | 1 889 |
| TOTALS | 2 725 671 | 2 293 669 | 2 543 988 |

(a) This company started exporting in July 1980.

(b) Prior to September 1979, exports were listed under the name of M-P Petroleum Ltd.

(c) Prior to July 1980, exports were listed under the name of Canmore Oil and Gas Limited.

(d) Prior to October 1979, exports were listed under the name of Pacific Petroleums Ltd.

(e) Prior to July 1979, exports were listed under the name of Sunoco Inc.

(f) This company started exporting in June 1981.

O-I

CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY FOR OIL PIPELINES ISSUED DURING 1981

| APPLICANT | FACILITIES | ESTIMATED COST | HEARD CONCLUDED | ISSUED | CERTIFICATE NO. |
|----------------------------------|---|----------------|-----------------|-------------|-----------------|
| Interprovincial Pipe Line (N.W.) | Approximately 866 km of 323.9 mm O.D. buried crude oil and NGL pipeline from Norman Wells, NWT, to Zama, northern Alberta. Initial design capacity of 5 000 m ³ /d could be raised to 7 150 m ³ /d with additional pump stations. | \$360,000,000 | 12 Nov. 1980 | 6 Nov. 1981 | OC-35 |

O-II

ORDERS RELATING TO NEW OIL PIPELINE FACILITIES ISSUED DURING 1981 CLASS "B" CONSTRUCTION

| APPLICANT | FACILITIES | ESTIMATED COST | ISSUED | ORDER NO. |
|----------------------------|---|----------------|--------------|-----------|
| Manito Pipelines Ltd. | Additional facilities, Kerrobert Pump Station, Saskatchewan | \$ 1,987,000 | 22 July 1981 | XO-2-81 |
| Manito Pipelines Ltd. | Tie-in facilities on Neilburg Lateral, Saskatchewan | — | 5 Nov. 1981 | XO-3-81 |
| Westspur Pipe Line Company | NGL metering facility, upgrading portion of low vapour pressure system, modifications to portion of low vapour pressure system, Manitoba and Saskatchewan | \$ 892,800 | 18 Feb. 1981 | XO-1-81 |

CLASS "C" CONSTRUCTION

| APPLICANT | FACILITIES | ESTIMATED COST | ISSUED | ORDER NO. |
|-----------------------------------|--|----------------|--------------|-----------|
| Cochin Pipe Lines Ltd. | All | \$ 900,601 | | |
| | Metering stations, communications, buildings and grounds, etc. | \$ 856,101 | 19 Aug. 1981 | XOM-8-81 |
| Dome NGL Pipeline Ltd. | Meter stations, other | \$ 44,500 | 22 Dec. 1981 | XOM-13-81 |
| Interprovincial Pipe Line Limited | Meter-run modification, mass measurement installations, contingencies | \$ 182,200 | 26 Aug. 1981 | XOM-9-81 |
| Interprovincial Pipe Line Limited | All | \$8,133,100 | | |
| | Pump stations, meter installation, communications, etc. | \$ 821,700 | 22 Apr. 1981 | XOM-5-81 |
| | Pump stations—metering and injection facilities | \$1,430,000 | 2 Sept. 1981 | XOM-10-81 |
| Montreal Pipe Line Limited | Pump stations, tanks, communications, building, miscellaneous, contingencies | \$5,881,400 | 28 Oct. 1981 | XOM-11-81 |
| Petroleum Transmission Company | Communications, computer-based data acquisition, contingencies, etc. | \$ 528,700 | 8 Apr. 1981 | XOM-3-81 |
| TNPL INC. | Miscellaneous, contingencies | \$15,000 | 18 Feb. 1981 | XOM-2-81 |
| TNPL INC. | All | \$4,130,900 | | |
| | Pump stations, communications, corrosion protection, meter stations, etc., contingencies | \$1,607,500 | 11 Feb. 1981 | XOM-1-81 |
| | Water crossing protection | \$ 226,200 | 29 July 1981 | XOM-7-81 |
| | Pumping and metering stations, oil dispatching installations, communications, buildings, furniture, data processing equipment, etc., contingencies | \$2,297,200 | 2 Dec. 1981 | XOM-12-81 |
| Trans Mountain Pipe Line Company | Corrosion protection, station equipment, buildings and grounds, tanks, automotive and work equipment, contingencies | \$1,461,075 | 8 Apr. 1981 | XOM-4-81 |
| Westspur Pipe Line Company | Pipeline replacement, pump stations, buildings, contingencies | \$323,150 | 28 Oct. 1981 | XOM-6-81 |

O-III

EXPORTS OF CANADIAN CRUDE OIL AND EQUIVALENT TO THE UNITED STATES 1981 AND 1980

| Company | Destination | 1981 | | 1980 | |
|-------------------------------|-----------------------|-----------------------------------|------------------|-----------------------------------|------------------|
| | | Total Cubic Metres for Year | Daily Average | Total Cubic Metres for Year | Daily Average |
| Districts I-IV | | | | | |
| Ashland Oil Inc. | N. Tonawanda, N.Y. | 31 132.3 | 85.3 | 159 496.9 | 435.8 |
| Ashland Oil Inc | Canton, Ohio | 4 224.1 | 11.6 | 77 030.8 | 210.5 |
| Ashland Oil Inc. | Findlay, Ohio | — | — | 146 899.4 | 401.4 |
| Ashland Oil Inc. | St. Paul, Minnesota | 95 391.6 | 261.3 | 186 165.4 | 508.7 |
| Cdn. Hydrocarbons Ltd. | Cut Bank, Montana | 1 812.9 | 5.0 | 1 166.6 | 3.1 |
| Clark Oil & Refining Corp. | Blue Island, Illinois | — | — | 0.2 | — |
| Cliffs Fuel Service Co. | Rapid River, Michigan | — | — | 231.3 | 0.6 |
| Consumers Power Company | Bay City, Michigan | 4 256.1 | 11.7 | 3 784.0 | 10.3 |
| Exxon Corp. | Billings, Montana | — | — | 23.1 | — |
| Koch Refining Co. | Pine Bend, Minnesota | 4 744 250.1 | 12 997.9 | 3 726 091.5 | 10 180.6 |
| Laketon Asphalt Refining Inc. | Laketon, Michigan | — | — | 25 332.0 | 69.2 |
| Marathon Oil Co. | Detroit, Michigan | — | — | 8 666.0 | 23.7 |
| Mobil Oil Corp. | Joliet, Illinois | 559 340.9 | 1 532.4 | 770 134.9 | 2 104.2 |
| Murphy Oil Corp. | Superior, Wisconsin | 282 690.0 | 774.5 | 284 894.5 | 778.4 |
| Standard Oil Co. (Ohio) | Toledo, Ohio | — | — | 9 531.5 | 26.1 |
| Sunoco Inc. | Toledo, Ohio | — | — | 36.6 | 0.1 |
| Total Petroleum Inc. | Alma, Michigan | — | — | 0.1 | — |
| Union Oil Co. of California | Lemont, Illinois | 42 467.2 | 116.3 | 29 401.9 | 80.3 |
| Other | | 545.1 | 1.5 | 185.1 | 0.5 |
| TOTAL DISTRICTS I-IV | | 5 766 110.3 | 15 797.6 | 5 429 071.8 | 14 833.5 |

O-IV

EXPORT CHARGES IN 1981 FOR CRUDE OIL AND REFINED PETROLEUM PRODUCTS

(\$ PER CUBIC METRE)

| TYPE | JAN. ⁽¹⁾ | FEB. | MAR. | APR. | MAY | JUNE | JULY ⁽²⁾ | AUG. | SEP. | OCT. ⁽³⁾ | NOV. | DEC. |
|------------------------------|---------------------|--------|--------|--------|--------|--------|---------------------|--------|--------|---------------------|--------|--------|
| Light, Medium and Condensate | 218.60 | 199.70 | 199.70 | 199.70 | 196.55 | 196.55 | 183.95 | 165.05 | 165.05 | 165.05 | 165.05 | 165.05 |
| Del Bonita | — | 186.50 | 186.50 | 186.50 | 183.35 | 183.35 | 170.75 | 151.85 | 151.85 | 151.85 | 151.85 | 151.85 |
| Lloydminster-type Blends | 146.25 | 135.50 | 135.50 | 135.50 | 129.20 | 129.20 | 122.90 | 108.70 | 108.70 | 108.70 | 108.70 | 108.70 |
| Fosterton | 160.20 | 145.35 | 145.35 | 145.35 | 139.05 | 139.05 | 129.55 | 115.35 | 115.35 | 115.35 | 115.35 | 115.35 |
| Designated Heavy | | | | | | | | | | | | |
| Crude Oils | 160.20 | 149.45 | 149.45 | 149.45 | 143.15 | 143.15 | 136.85 | 122.65 | 122.65 | 122.65 | 122.65 | 122.65 |
| Motor Gasoline and Jet B | 103.50 | 117.05 | 118.95 | 131.55 | 124.30 | 109.50 | 109.50 | 103.20 | 103.20 | 96.90 | 96.90 | 96.90 |
| Middle Distillates | 103.50 | 117.05 | 118.95 | 120.80 | 107.90 | 100.35 | 90.30 | 93.15 | 93.15 | 93.15 | 97.85 | 104.15 |
| Heavy Fuel Oil | 84.65 | 84.65 | 103.55 | 103.55 | 83.70 | 68.90 | 56.30 | 37.45 | 37.45 | 37.45 | 28.00 | 34.30 |
| Partially Processed Oils | 103.50 | 117.05 | 118.95 | 120.80 | 107.90 | 100.35 | 90.30 | 86.85 | 91.25 | 79.00 | 63.55 | 78.35 |

1) Reduction of \$6.30 per cubic metre applicable in respect of volumes of crude oil and equivalent exported in January which entered exporting pipeline systems after 1 January 1981.

2) Reduction of \$6.30 per cubic metre applicable in respect of volumes of crude oil and equivalent exported in July which entered exporting pipeline systems after 1 July 1981.

3) Reduction of \$15.75 per cubic metre applicable in respect of volumes of crude oil and equivalent exported in October which entered exporting pipeline systems after 1 October 1981.

O-V

EXCHANGES OF CRUDE OIL AND EQUIVALENT WITH THE UNITED STATES VIA MID-CONTINENT PIPELINE SYSTEMS—1981

| LICENCE HOLDER | EXCHANGE PARTNER | QUANTITY IN CUBIC METRES | | |
|--------------------------|--------------------------------|--------------------------|-------------|-------------|
| | | LICENSED | EXPORTED | IMPORTED |
| BP Oil Ltd. | Sunoco Inc. | 14 367.5 | 14 387.3 | 14 358.1 |
| BP Oil Ltd. | Mobil Oil Corporation | 33 040.0 | 37 885.0 | 26 479.1 |
| BP Oil Ltd. | Murphy Oil Corporation | 450 960.0 | 320 484.8 | 309 489.8 |
| BP Oil Ltd. | Phillips Petroleum Corporation | 43 332.0 | 23 887.3 | 30 580.8 |
| Gulf Canada Products Co. | Conoco Inc. | 386 475.2 | 32 478.6 | 38 478.4 |
| Gulf Canada Products Co. | Murphy Oil Corporation | 347 064.9 | 40 209.7 | 20 376.1 |
| Imperial Oil Ltd. | Exxon Corporation | 388 807.0 | 332 181.7 | 331 732.6 |
| Shell Canada Ltd. | Conoco Inc. | 886 268.7 | 959 587.6 | 877 927.5 |
| Shell Canada Ltd. | Farmers Union Central Exchange | 419 821.4 | 421 495.9 | 530 352.3 |
| Shell Canada Ltd. | Shell Oil Co. | 1 160 043.0 | 1 156 821.9 | 1 160 043.0 |
| Sunoco Inc. | Ashland Oil Inc. | 555 668.6 | 203 788.1 | 213 603.0 |
| Sunoco Inc. | Total Petroleum Inc. | — | — | 249.9 |
| Texaco | Exxon Corporation | 30 370.0 | 25 799.8 | 32 457.7 |
| TOTAL | | 4 716 218.3 | 3 569 007.7 | 3 586 128.3 |

O-VI

EASTERN CANADIAN EXCHANGE SHIPMENTS — 1981

| LICENCE HOLDER | EXCHANGE PARTNER | QUANTITY IN CUBIC METRES | | |
|----------------------|------------------|--------------------------|-----------|-----------|
| | | LICENSED | EXPORTED | IMPORTED |
| Ultramar Canada Inc. | Conoco Inc. | 251 506.4 | 304 560.4 | 180 107.2 |
| Ultramar Canada Inc. | Ashland Oil Inc. | 80 906.0 | 80 795.1 | 80 891.5 |
| TOTAL: | | 332 412.4 | 385 355.5 | 260 998.7 |

O-VII

EXPORTS OF LICENSED PETROLEUM PRODUCTS—1981*

(CUBIC METRES)

| MONTH | PARTIALLY PROCESSED OIL | MOTOR GASOLINE AND JET B | HEAVY FUEL OIL | MIDDLE DISTILLATE | TOTAL |
|-----------|-------------------------------|--------------------------------|-------------------|----------------------|-------------|
| January | — | 117 346.8 | 223 069.0 | 298 289.6 | 638 705.4 |
| February | 21 771.1 | 68 921.9 | 309 945.5 | 183 441.2 | 584 085.1 |
| March | 20 420.4 | 45 173.5 | 208 918.9 | 68 762.8 | 343 275.6 |
| April | 19 825.8 | 40 343.3 | 201 586.2 | 97 161.6 | 358 916.9 |
| May | 938.2 | 47 150.5 | 205 974.2 | 66 985.4 | 321 048.3 |
| June | 919.3 | 39 890.8 | 214 630.9 | 144 644.6 | 400 085.6 |
| July | 10 317.7 | 79 810.9 | 235 033.7 | 155 900.4 | 481 062.7 |
| August | 29 485.2 | 6 138.8 | 192 695.5 | 93 525.5 | 321 845.0 |
| September | 20 586.3 | 89 061.2 | 214 435.7 | 257 957.1 | 582 040.3 |
| October | 20 780.3 | 43 305.5 | 183 706.3 | 194 237.1 | 442 029.2 |
| November | 10 031.8 | 93 489.8 | 219 624.8 | 328 553.5 | 651 699.9 |
| December | 383.5 | 422.4 | 240 447.1 | 48 928.0 | 290 181.0 |
| TOTAL | 155 465.6 | 671 055.4 | 2 650 067.8 | 1 938 386.8 | 5 414 975.6 |

* Excludes exports of licensed aviation and marine fuels used in international transportation

O-VIII

EXPORTS OF LICENSED AVIATION AND MARINE FUELS USED IN INTERNATIONAL TRANSPORTATION

(CUBIC METRES)

| MONTH | JET A | JET B | HEAVY FUEL OIL | MARINE DIESEL/ GASOIL | TOTAL |
|-----------|---------|---------|-------------------|--------------------------|-----------|
| January | — | — | — | — | — |
| February | — | — | — | — | — |
| March | — | — | — | — | — |
| April | — | — | — | — | — |
| May | 101 683 | 17 606 | 186 432 | 40 099 | 345 820 |
| June | 118 807 | 17 144 | 180 683 | 44 150 | 360 784 |
| July | 135 850 | 17 005 | 172 480 | 47 648 | 372 983 |
| August | 138 830 | 18 729 | 182 639 | 47 355 | 387 553 |
| September | 121 830 | 25 496 | 184 171 | 52 080 | 383 577 |
| October | 93 098 | 11 888 | 206 807 | 50 679 | 362 472 |
| November | 87 175 | 12 067 | 235 352 | 61 834 | 396 428 |
| December | 89 900 | 11 500 | 204 343 | 39 912 | 345 655 |
| TOTAL | 887 173 | 131 435 | 1 552 907 | 383 757 | 2 955 272 |

Note: Program commenced 1 May 1981.

Volumes shown are subject to revision.

E-I

CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY FOR INTERNATIONAL POWER LINES ISSUED PURSUANT TO SECTION 44 DURING 1981

| APPLICANT | FACILITIES | ESTIMATED COST | APPLICATION HEAR | ISSUED | CERTIFICATE NO. |
|------------------|--|----------------|------------------|--------------|-----------------|
| 1. Ontario Hydro | One international power line consisting of two circuits to be designated PA301 and PA302 and to extend .91 kilometers from the Sir Adam Beck Switch Yard to a point on the international boundary line located in the Niagara River east of lot 1, in the City of Niagara Falls in the Province of Ontario. This line would be built for 230/345 kV three phase, 60 hertz operation. | \$20,200,000 | 17-27 March 1981 | 19 June 1981 | EC-III-20 |

E-II

ORDERS RELATING TO INTERNATIONAL POWER LINES ISSUED DURING 1981

| TYPE OF ORDER | APPLICANT | FACILITIES | ISSUED | ORDER NO. |
|--|---------------|---|--------------|------------|
| Order Under the International Power Line Regulations | Ontario Hydro | Order approving the change in the length of the existing international power line authorized by Certificate No. EC-16 | 19 June 1981 | AO-1-EC-16 |

E-III

LICENCES TO EXPORT ELECTRIC POWER AND ENERGY PURSUANT TO SECTION 82 ISSUED DURING 1981

| APPLICANT | CLASS | MEGAWATTS | ANNUAL GIGAWATT-HOURS | TERM | | APPLICATION HEARD | ISSUED | LICENCE NO. |
|------------------|--------------------|-----------|-----------------------|----------------------|----------------------|-------------------|-------------|-------------|
| | | | | FROM | TO | | | |
| 1. Ontario Hydro | Carrier Transfer | | 10 000 | 81-07-01 | 95-12-31 | 17-27 March 1981 | 12 May 1981 | EL-234 |
| 2. Ontario Hydro | Miscellaneous Firm | 1 200 | 10 500 | 81-07-01 | 91-06-30 | 17-27 March 1981 | 12 May 1981 | EL-135 |
| 3. Ontario Hydro | Interruptible | | 20 000* 25 000* | 81-07-01 84-01-01 | 83-12-31 91-06-30 | 17-27 March 1981 | 12 May 1981 | EL-136 |

* Less exports under EL-135

E-IV

ORDERS RELATING TO EXPORT OF ELECTRIC POWER AND ENERGY ISSUED DURING 1981

Orders Issued Pursuant to Section 7 of the Regulations under Part VI of the Act

| APPLICANT | CLASS | KILOWATTS | ANNUAL KILOWATT-HOURS | TERM | | ISSUED | ORDER NO. |
|---|-------|-----------|-----------------------|----------|----------|----------|-----------|
| | | | | FROM | TO | | |
| 1. Hydro-Québec | Firm | 240 | 48 000 | 81-08-01 | 84-07-31 | 81-07-09 | ELO-154 |
| 2. Hydro-Québec | Firm | 240 | 48 000 | 81-08-01 | 84-07-31 | 81-07-09 | ELO-155 |
| 3. Hydro-Québec | Firm | 40 | 80 000 | 81-08-01 | 84-07-31 | 81-07-09 | ELO-156 |
| 4. West Kootenay Power & Light Company Ltd. | Firm | 20 | 50 000 | 82-01-01 | 84-12-31 | 81-12-01 | ELO-157 |

Amending Orders Issued Relative to Electric Power and Energy

| APPLICANT | ASSOCIATED LICENCE | ISSUED | ORDER NO. |
|------------------------------|--------------------|--------------|------------|
| 1. Ontario Hydro | EL-94 | 19 June 1981 | RO-1-EL-94 |
| 2. Boise Cascade Canada Ltd. | EL-63 | 14 Dec. 1981 | AO-3-EL-63 |
| 3. Manitoba Hydro | EL-97 | 23 Dec. 1981 | AO-1-EL-97 |

E-V

EXPORTS OF ELECTRIC ENERGY — CALENDAR YEAR 1981

| EXPORTER | LICENCE NUMBER | MEGAWATT HOURS | | | | | REPORTED DOLLAR VALUE OF EXPORT | |
|--|--|--|--|--|--|--|--|---|
| | | LICENCE AUTHORIZATION | | GROSS ENERGY EXPORTED | | | | |
| | | FIRM | INTER-RUPTIBLE | FIRM | INTER-RUPTIBLE | EXCHANGE ⁽¹⁾ | FIRM | INTER-RUPTIBLE |
| 1. Maine and New Brunswick Electrical Power Company, Limited | EL-22 EL-23 | 250 000 — | — 25 000 | 161 774 — | — — | — — | 1 161 800 — | — — |
| 2. Fraser Inc. | EL-122 EL-123 | 400 000 — | — 50 000 | 325 850 — | — — | — — | 11 635 811 — | — — |
| 3. The New Brunswick Electric Power Commission | AO-1-EL-64 AO-1-EL-65 AO-4-EL-66 EL-108 EL-109 EL-110 EL-111 EL-112 ELO-146 to ELO-148 | 3 504 000 ⁽²⁾ — 876 000 140 000 — 250 000 140 000 — 300 | — 2 190 000 ⁽²⁾ — — 300 000 — — 179 000 — | 588 602 — — — — — 2 016 203 | — 2 094 719 — — 72 037 — — 1 824 — | -391 061 13 176 384 518 — -50 698 43 049 — 237 — | 41 472 105 — — — — — 192 152 9 084 | — 121 351 101 — — — — 39 228 — |
| TOTAL NEW BRUNSWICK | | | | 1 078 445 | 2 168 580 | -779 | 54 470 952 | 126 116 312 |
| 4. Cedars Rapids Transmission Company Limited | ELO-150 | — | 20 000 | — | — | — | — | — |
| 5. Hydro-Québec | EL-96 EL-113 EL-131 EL-132 EL-133 ELO-136 to ELO-143 ELO-154 to ELO-156 | 3 000 000 — — 131 400 — 712 1 040 | — 10 200 000 ⁽³⁾ 320 000 — 525 000 ⁽⁴⁾ — — | 3 000 000 — 164 658 71 178 112 752 372 335 | — 4 968 529 — — — — — | -4 340 — — — — — — | 27 536 000 — 2 453 237 — 14 829 — 10 964 | — 156 806 240 5 555 026 — 3 971 351 — — |
| TOTAL QUEBEC | | | | 3 071 885 | 5 245 939 | -4 340 | 30 015 030 | 166 332 617 |
| 6. Ontario Hydro | EL-32 EL-94 EL-95 EL-134 EL-135 EL-136 ELO-144 | 15 000 — — — 10 500 000 — 80 | — 8 000 000 15 000 000 10 000 000 — 20 000 000 ⁽⁵⁾ — | 1 023 — 6 003 046 — 153 096 4 895 329 26 | — — 2 058 — — 187 — | — -237 368 — -108 869 — — — | 2 045 — 236 188 086 — 6 656 435 — 1 035 | — — — — 180 036 542 — — |
| 7. Canadian Niagara Power Company Limited | EL-124 EL-125 | 130 000 — | — 250 000 | 97 400 — | — 230 004 | — 10 631 | 2 240 899 — | — 4 288 320 |
| 8. Boise Cascade Canada Ltd. | AO-3-EL-63 | — | 87 600 | — | — | — | — | — |
| 9. The Detroit and Windsor Subway Company | AO-1-ELO-152 | 1 250 | — | 999 | — | — | — | — |
| 10. The Canadian Transit Company | ELO-145 | 25 | — | 24 | — | — | — | — |
| 11. St. Lawrence Power Company | EL-114 EL-115 EL-116 | — — — | 250 000 150 000 150 000 | — 13 258 — | — — — | 115 946 — 5 157 | — — — | — 249 371 — |
| 12. Dow Chemical of Canada Ltd. | EL-121 | — | 438 000 | — | 128 479 | — | — | 5 639 878 |
| TOTAL ONTARIO | | | | 252 568 | 11 270 116 | -212 258 | 8 900 414 | 426 402 197 |

E-V (cont'd)

EXPORTS OF ELECTRIC ENERGY — CALENDAR YEAR 1981

| EXPORTER | LICENCE NUMBER | MEGAWATT HOURS | | | | | REPORTED DOLLAR VALUE OF EXPORT | |
|--|----------------|-----------------------|---------------------------|-----------------------|----------------|-------------------------|---------------------------------|----------------|
| | | LICENCE AUTHORIZATION | | GROSS ENERGY EXPORTED | | | | |
| | | FIRM | INTER-RUPTIBLE | FIRM | INTER-RUPTIBLE | EXCHANGE ⁽¹⁾ | FIRM | INTER-RUPTIBLE |
| 13. Manitoba Hydro | AO-1-EL-97 | — | 1 500 000 | — | 2 075 459 | — | — | 23 265 552 |
| | EL-98 | 876 000 | — | 266 828 | — | — | 6 417 432 | — |
| | EL-99 | 262 800 | — | 262 485 | — | — | 3 471 520 | — |
| | EL-100 | 800 000 | — | — | — | — | — | — |
| | EL-101 | 2 500 000 | — | — | — | 2 900 | — | — |
| | EL-102 | 5 000 000 | — | 62 442 | — | — | 1 417 280 | — |
| | EL-103 | — | 12 000 000 ⁽⁶⁾ | — | 908 481 | 100 756 | — | 16 117 022 |
| | ELO-149 | 7 884 | — | 1 586 | — | — | 38 541 | — |
| | ELO-153 | 15 | — | 12 | — | — | — | — |
| | TOTAL MANITOBA | | | 593 353 | 2 983 940 | 103 656 | 11 345 253 | 39 382 574 |
| 14. British Columbia Hydro and Power Authority | EL-126 | 32 000 | — | 11 779 | — | — | 351 147 | — |
| | EL-127 | 2 000 000 | — | — | — | 525 409 | — | — |
| | EL-128 | 3 000 000 | — | — | — | — | — | — |
| | EL-129 | — | 525 600 | — | 623 900 | — | — | 11 361 606 |
| | EL-130 | — | 10 000 000 ⁽⁷⁾ | — | 6 961 956 | 225 880 | — | 251 553 886 |
| | ELO-151 | 600 | — | 292 | — | — | 32 190 | — |
| 15. Cominco Ltd. | EL-20 | — | 500 000 | — | — | — | — | — |
| | EL-104 | 50 000 | — | — | — | — | — | — |
| | EL-105 | — | 1 400 000 | — | 467 105 | 4 796 | — | 17 611 896 |
| 16. West Kootenay Power and Light Company | ELO-135 | 50 | — | 32 | — | — | 384 348 | 280 527 388 |
| TOTAL BRITISH COLUMBIA | | | | 12 103 | 8 052 961 | 756 085 | 384 348 | 280 527 388 |
| TOTAL CANADA | | | | 5 008 354 | 29 721 536 | 642 364 | 105 115 997 | 1 038 761 088 |

(1) Exchange is no value energy. It includes inadvertent and circulating flows, equichange, storage adjustment transfer and wheeling or carrier transfer.

(2) Total exports under Licences EL-64 and EL-65 should not exceed 4 380 GW.h.

(3) Total exports should not exceed 12 000 GW.h when combined with the amount exported under Licence EL-96.

(4) Total exports should not exceed 525 GW.h when combined with the amount exported under Licence EL-133.

(5) Total exports should not exceed 20 00 GW.h when combined with the amount exported under Licence EL-135.

(6) Total exports should not exceed 12 000 GW.h when combined with the amounts exported under Licences EL-97, EL-98, EL-99, EL-100, EL-101 and EL-102.

(7) Total exports should not exceed 10 000 GW.h during the water year (1 October to 30 September) when combined with the amounts exported under Licences EL-128 and EL-129.

E-VI

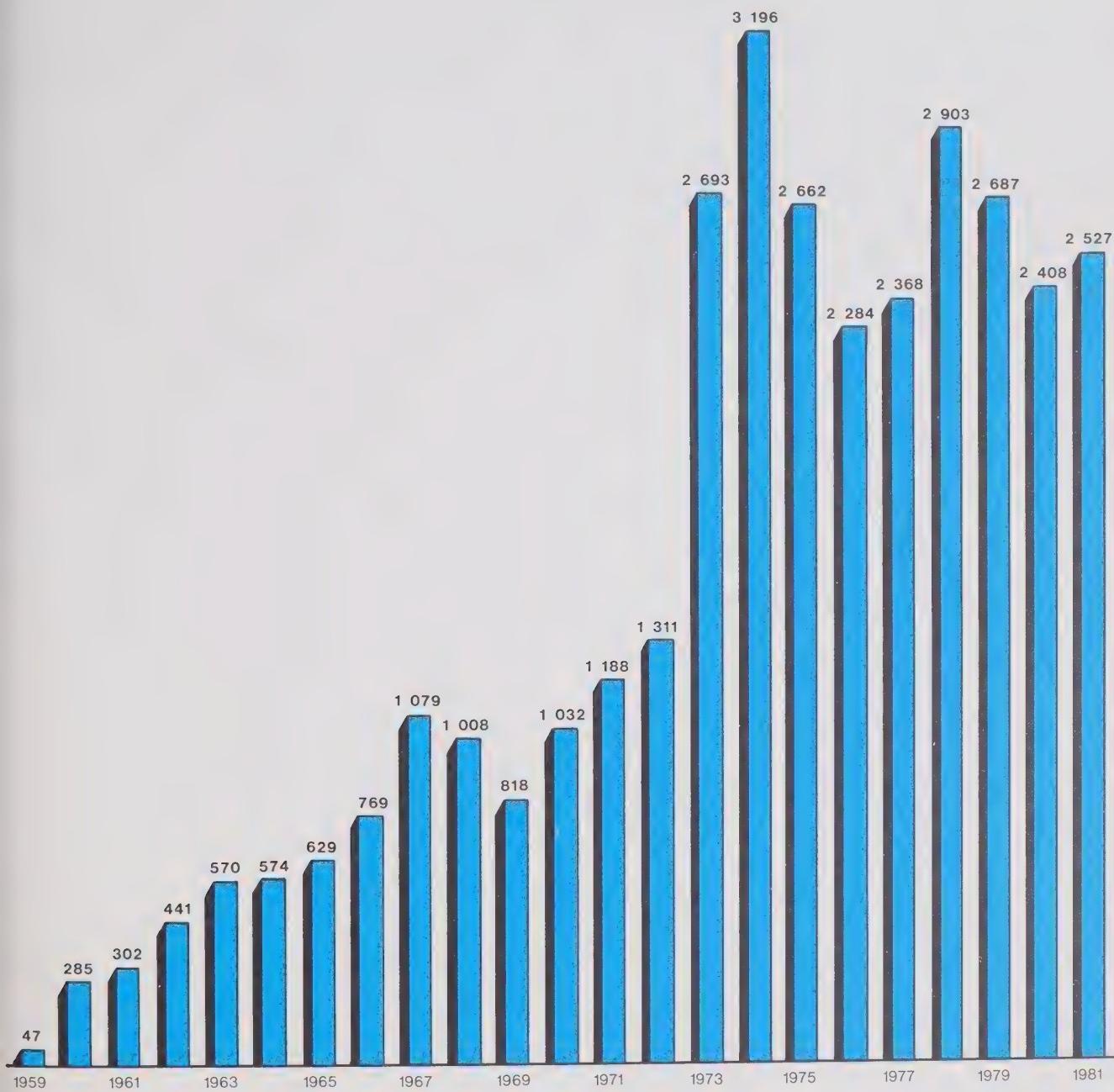
TOTAL CANADIAN ELECTRIC ENERGY SUPPLY AND TRADE WITH THE UNITED STATES — CALENDAR YEAR 1981

| | CATEGORY (GIGAWATT HOURS) |
|--|---|
| Electric Energy Generation for all Canada | 377 621 — (preliminary) |
| Electric Energy Importation from U.S.A. | 1 497 — " |
| Total Canadian Electric Energy Supply | 379 118 — " |
| Electric Energy Export (Gross) to U.S.A. | 5 008 — (firm) 1.3 % of Canadian supply 29 722 — (interruptible) 7.8 % of Canadian supply 642 — (exchange) 0.2 % of Canadian supply |
| Total Electric Energy made available in Canada | 343 746 — (preliminary) |

S-I

**TOTAL NUMBER OF BOARD CERTIFICATES, LICENCES, PERMITS,
ORDERS AND AUTHORIZATIONS BETWEEN 1959 AND 1981.**

The National Energy Board Act was proclaimed on November 2, 1959.





76
55

900 1000 1000

National Energy Board Annual Report 1982

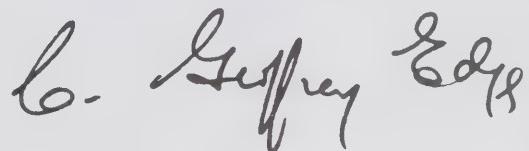
25 March 1983

The Honourable Jean Chrétien, P.C.,
Minister of Energy, Mines and Resources,
Ottawa, Ontario.

Dear Sir:

In accordance with the provisions of Section 91 of the National Energy Board Act, the Revised Statutes of Canada, 1970, chapter N-6, I am pleased to submit the Annual Report of the National Energy Board for the year ended 31 December 1982.

Yours sincerely,



C. Geoffrey Edge
Chairman

Ce rapport annuel est publié séparément dans les deux langues officielles. Des copies en langue française pourront être obtenues du bureau de la division du secrétariat de l'Office national de l'énergie.

Cover: Pipeline welding along
Trans Québec & Maritimes
Inc. natural gas
pipeline (Photo supplied
by TQM)

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CHAIRMAN'S MESSAGE

The year 1982 has been a significant one in the development of the Board.

The National Energy Board Act has been substantially amended. The amendments stem from three separate bills, C-108, C-60 and C-87. Bill C-108 expands our role in international power lines, gives us improved ability to regulate pipeline tariffs through the use of interim tolls, authorizes an increase in the size of the Board from nine Members to eleven, and brings a number of other operating improvements. Bill C-60, which was given royal assent in 1981 and proclaimed early in 1983, changes the expropriation and compensation procedures for additional lands required for pipeline rights-of-way, providing landowners with the right to local public hearings before their lands can be expropriated. Bill C-87, proclaimed at the same time as Bill C-60, provides for the appointment of up to six temporary Board Members.

Following the issuance in 1981 of the Board's report on its inquiry into Canadian energy supply and demand, an Omnibus Hearing was conducted in 1982 on 29 applications to export natural gas, both to the United States by pipeline and to Japan and Korea in liquefied form. The decision on the first phase, handed down in May, was a major one, establishing new procedures for determining the surplus of natural gas available for export. The final decision, released early in 1983, recommended the approval by Cabinet of a number of new licences.

At the same time the market for natural gas in the United States has been depressed, with considerable pressure on utilities to buy the lowest cost gas available. This situation is due partly to recession and partly to a surplus of low-cost indigenous gas. These factors are causing many of the existing Canadian gas export licences to be considerably underutilized.

The decline in the Canadian demand for oil, a striking feature of the oil scene in 1981, became even more marked in 1982. This decline was the result of continuing conservation, fuel switching and the deepening recession. In the previous year the decline in demand was largely offset by the Alberta Government's cutback in provincial production of crude oil, but in 1982, with production available at maximum capability, available supply once again exceeded demand. The Board was in the forefront of efforts to keep shut-in oil production capacity to a minimum. Through export licensing and related activities, the Board played a major role in minimizing the shut-in, particularly of heavy crude oil, during the second half of the year.

For electricity, the year 1982 provided a landmark decision, namely the first experimental licensing of power derived entirely from nuclear generation. For this purpose the Board issued three licences to The N.B. Brunswick Electric Power Commission. One additional licence application was denied, but following the review of new evidence at a hearing later in the year, this fourth licence was granted.

The opening of the Arctic Pilot Project hearing in February marked the beginning of regulatory proceedings before the Board on the development of Arctic land energy resources. In July, the project sponsors announced they were investigating the possibility of selling the liquefied natural gas in Europe rather than in the United States. TransCanada sought an indefinite adjournment of its application for the regasification terminal in Eastern Canada which would not be required in the event of exports to Europe. The Board granted TransCanada's request on 28 July, and adjourned the Arctic Pilot Hearing on 31 August until the project sponsors could come forward with a definitive proposal for the export of liquefied natural gas.

Another application for an offshore project expected in 1983, namely, the transportation and export of gas from Sable Island.

The Board has been viewing with increased concern the high cost of construction of pipelines in Canada and the fact that this cost was rising at a faster rate here than in the United States. In a report issued in June 1982, the Board identified a wide range of problems which require resolution if the pipeline construction industry is to regain its full health and fulfil its vital role of connecting supplies to market. As a result of the Board's report, the Minister of Energy, Mines and Resources has set up a Task Force to make recommendations for the resolution of these problems and to report to him by mid 1983.

To focus more attention on the problems of financing and the design of tariffs for pipelines in the 1980's, the Board, in conjunction with the McGill University Centre for the Study of Regulated Industries, sponsored a major conference on this subject in November 1982. A stimulating array of papers was presented to senior executives from government and industry, and public interest representatives.

In September 1982, the Board made a presentation on frontier transportation of oil and gas to the Special Committee of the Senate on the Northern Pipeline. A major recommendation was that a federal coordinator be appointed for complex major energy projects to streamline and coordinate the presentation of information for Cabinet decisions, and that a Commissioner be named to ensure that key energy projects are completed expeditiously under effective cost control and environmental and socio-economic safeguards.

To provide the public with advance notice of forthcoming regulatory actions, the Board commenced in 1982 publishing a Regulatory Agenda. This Agenda is now issued quarterly and has received very favourable response.

I have touched on some of the more noteworthy events of 1982. As we turn to the future, the Board will be placing increasing emphasis on ensuring that the objectives of regulation by the National Energy Board are achieved. In broad terms, all applications to the Board should be processed and decided expeditiously, fairly and without undue burden on the interested parties. Projects found to be in the Canadian public interest should be authorized to proceed expeditiously, consistent with provision for appropriate safeguards.



C. Geoffrey Edge
Chairman

MEMBERS OF THE NATIONAL ENERGY BOARD

Chairman: C. Geoffrey Edge

Vice-Chairman: R.F. Brooks

Associate Vice-Chairmen:
L.M. Thur
W.A. Scotland*
J. Farmer
A.D. Hunt

Members:
J.R. Jenkins
J.R. Hardie
J.L. Trudel
A.B. Horner, Q.C.
A.B. Gilmour

Change in Membership

Amendments to the NEB Act arising from Bill C-108 provide for the appointment of eleven permanent Board Members; previously there had been nine.

On 16 August 1982, the Minister announced the appointment of Mr. A. Digby Hunt as a Member and Associate Vice-Chairman of the Board. Before joining the Board, Mr. Hunt was Assistant Deputy Minister in the Department of Energy, Mines and Resources, a position which he had held since 1976. He was also Chairman of the Petroleum Compensation Board and Vice-Chairman of the Lower Churchill Development Corporation.

* Mr. Scotland is the Board's Designated Officer with the Northern Pipeline Agency and is based in Calgary.

STANDING PANELS AND COMMITTEES*

| PANEL | CHAIRMAN | MEMBERS | | ALTERNATE | |
|--------------------|-------------|-------------------|-----------------|--------------|--|
| Oil | R.F. Brooks | J.R. Jenkins | J.R. Hardie | L.M. Thur | |
| Gas | L.M. Thur | R.B. Horner | A.B. Gilmour | J. Farmer | |
| Electrical | J.L. Trudel | R.F. Brooks | A.D. Hunt | L.M. Thur | |
| Pipeline | J. Farmer | J.R. Jenkins | R.B. Horner | A.B. Gilmour | |
| Financial | | | | | |
| Regulatory | J.R. Hardie | A.D. Hunt | J.L. Trudel | R.B. Horner | |
| Committee | | | | | |
| Executive | C.G. Edge | R.F. Brooks | L.M. Thur | | |
| | | J. Farmer | A.D. Hunt | | |
| | | R. St.G. Stephens | | | |
| Internal Audit | C.G. Edge | R.F. Brooks | L.M. Thur | | |
| | | R. St.G. Stephens | | | |
| Energy Studies | C.G. Edge | R.F. Brooks | L.M. Thur | | |
| | | K.W. Vollman | | | |
| Regulatory Process | R.F. Brooks | H. Wetston | G. Yorke Slader | R.B. Horner | |

The Chairman is ex-officio member of all Panels and Committees.

The Board assigns much of its ongoing regulatory workload to five standing panels, each composed of a quorum of three Board Members. In addition certain Board Members are involved in the work of four committees, two of which deal with issues affecting the internal management of the Board. The composition of each panel and Committee is shown in the accompanying table.

STANDING PANELS

In exercising their delegated powers and duties as described below, the Panels refer to the whole Board any matters which raise questions of general policy, involve substantial expenditures on the part of regulated companies, require consideration as to the desirability of a public hearing, or otherwise raise issues considered by the Panel to be of importance to the Board as a whole.

Electrical Panel

The Electrical Panel exercises the powers of the Board in all matters relating to electricity, excluding the issuance and amendment of certificates or licences and any matters which would require the holding of a public hearing.

Financial Regulatory Panel

The Financial Regulatory Panel exercises the powers of the Board with respect to tolls and tariffs charged by gas and oil pipeline companies under the Board's jurisdiction, excluding any matter that necessitates the holding of a public hearing.

Gas Panel

The Gas Panel exercises the powers of the

Board in all matters relating to natural gas, liquefied natural gas, synthetic natural gas, propane, butanes, ethane, and ethylene, except for the issuance and amendment of licences or any other matter that requires the holding of a public hearing. In addition, the Panel advises the Minister under section 22 of the Act respecting the export price of natural gas.

Oil Panel

The Oil Panel exercises the powers of the Board under Part I of the Energy Administration Act pertaining to the export charge on crude oil, oil products, and oil used as fuel in international transportation. The Panel issues licences for the export of oil and oil products for a period of up to one year, oversees the interprovincial movement and allocation of western Canadian crude oil and advises the Minister respecting oil-related energy matters.

Pipeline Panel

The Pipeline Panel exercises the powers of the Board in all matters relating to the construction, operation, and maintenance of oil and gas pipelines, including pipeline safety and environmental considerations, but excluding the issuance and amendment of certificates or matters that require a public hearing.

COMMITTEES

Executive Committee

The Executive Committee, which consists of the five senior-level Board Members, as well as the Executive Director, deals with long-term, broad issues affecting the Board.

Internal Audit Committee

The Internal Audit Committee keeps the Board's operations under review to ensure that they are administered efficiently, economically, and effectively.

Committee on Regulatory Process

This Committee studies and keeps under review all aspects of the regulatory process, and recommends to the Board measures designed to improve the efficiency and effectiveness of regulation.

Energy Studies Committee

This Committee initiates and reviews studies on any aspect of energy which may be of interest to the Board and which is outside the orbit of other panels and committees.

FUNCTI~~N~~ONS AND RESPONSIBILITIES OF THE NATIONAL ENERGY BOARD

Under the National Energy Board Act of 1959 and subsequent amendments, the Board has two principal responsibilities: to regulate specific areas of the oil, gas and electrical utility industries in the public interest, and to advise the Government on the development and use of energy sources.

The Board on its own initiative may hold inquiries into a particular aspect of the energy situation and prepare reports for the information of the Government, of Parliament and of the general public.

The Board also carries out studies and prepares reports at the request of the Minister.

The regulatory role of the Board encompasses the following fields:

Certificates of Public Convenience and Necessity for Pipelines and Power Lines

The Board grants certificates to construct and operate interprovincial and international oil, gas and petroleum products pipelines, and international electric power lines. Before a certificate is issued, the Board considers the application at a public hearing. Under an amendment passed in 1982 and proclaimed on 1 February 1983, the NEB Act may, by order of the Governor in Council, be extended to designated interprovincial power lines.

Pipeline and Power Line Orders

The Board may issue orders approving minor additions or modifications to existing pipeline systems without calling a public hearing. Such additions and modifications are restricted to sections, branches and extensions of pipelines not more than 5 kilometres in length, and ancillary

installations such as tanks, pumps, compressors, meter stations, and communications systems. The Board may also by order authorize international power lines of voltage not exceeding 50 kV.

Pipeline Utility Crossings

For reasons of safety, the protection of the environment, and the existence of other utility services, no pipeline may cross or be crossed by another utility without authorization. Where a pipeline is to cross a navigable water or a railway, leave must be obtained from the Minister of Transport or the Canadian Transport Commission respectively. Crossings of the facilities of other utilities may only be made with the authorization of the Board. Authorization where given is by Board order after consideration of all the relevant information.

Pipeline Safety

The Board's Oil and Gas Pipeline Regulations provide for the safe design, construction and operation of pipelines under Board jurisdiction. Commencing with the design stage, applications for pipeline construction are reviewed to ensure compliance with the regulations. Pipeline companies are required to have contingency plans developed in coordination with local authorities to provide for the safety of the public in the event of line breaks during testing or operation. To ensure high standards in the safety of pipeline construction and operation, the Board carries out inspection programs and conducts investigations and reviews of pipeline system performance.

Environmental Protection

The environmental information requirements for new oil and gas pipelines and for modifications or extensions to existing

systems and for international power lines are set forth in the Board's Rules of Practice and Procedure. The Board takes into consideration the environmental impact of the construction and operation of oil pipelines, gas pipelines and international power lines. The Board considers such diverse concerns as impact on permafrost soils, erosion and siltation at water crossings, impact on wildlife, preservation of archaeological sites, air emissions, noise and protection of agricultural soils.

Export Licences and Orders

The National Energy Board Act requires the Board, in considering applications for export licences, to take into consideration all matters that appear to it to be relevant. It must, among other things, satisfy itself that the quantities of energy involved do not exceed the surplus remaining after allowance has been made for reasonably foreseeable Canadian requirements for that particular form of energy. Following proclamation of Bill C-108, there is an additional requirement that, where oil or gas is to be exported and subsequently imported, or in the case of an import of oil or gas, the Board must have regard for the equitable distribution of oil or gas in Canada. Also, it allows the Board to be given the power to, in effect, allocate supplies of oil or gas between regions of the country, e.g., during periods of tight supply other than times of national emergency.

Regulation of Pipeline Tolls, Tariffs and Accounting Practices

The Board regulates the tolls and tariffs of pipeline companies under federal jurisdiction to ensure they are just and reasonable and to ensure that there is no unjust discrimination against any person or locality. The tolls or tariffs allowed reflect, among other things, the capital and operating costs of the pipeline company and

the necessity for it to earn an adequate return on its investment so as to be able to attract capital as needed to maintain and extend service. The Board has established uniform accounting classifications and practices which it requires oil and gas pipeline companies under its jurisdiction to use.

Responsibilities under the Energy Administration Act

The Board is required to administer certain provisions of the Energy Administration Act (formerly the Petroleum Administration Act); namely the imposition and collection of a charge on the export of crude oil and certain petroleum products and the administration of the price of natural gas in interprovincial and export trade.

Responsibilities under the Northern Pipeline Act

The Northern Pipeline Act, passed on 12 April 1978, provides authority for the construction of a natural gas pipeline in Canada along the Alaska Highway, as well as for the creation of the Northern Pipeline Agency to oversee the construction of the pipeline. Certain terms and conditions in the legislation require the company to seek various approvals from the Board and from the Minister responsible for the Northern Pipeline Act. The Board's responsibilities relate mainly to financing and tariffs, approval of pipe specifications, granting of leave to open orders and regulation of the operation of the line.

Implementation of Board Decisions

When the Board is prepared to grant a certificate for a pipeline or a power line or to issue a licence for the export of natural

gas or electricity, the import of natural gas, or the export of oil for a period exceeding one year, it so reports to the Governor in Council through the Minister of Energy, Mines and Resources. If a certificate is approved by the Governor in Council, the certificate is then issued by the Board. In the case of export or import applications, licences issued by the Board go into effect on approval by the Governor in Council. A decision of the Board to refuse an application is not subject to referral to the Governor in Council. The Board's Reasons for Decision on applications are issued as public documents.

Because of the special nature of the trade in crude oil and petroleum products, specifically the use of short-term contracts and the need to make decisions on a daily basis, oil export controls (except for licences for periods in excess of one year) are exercised directly by the Board without reference to the Governor in Council.

Applications for orders authorizing the export of relatively small quantities of ethane, propane, butanes, and ethylene for periods of up to one year, and a maximum of three billion cubic metres of natural gas in any one year for up to two years, are also dealt with by the Board without reference to the Governor in Council. Decisions on rates, tolls, and tariffs are made by the Board without reference to the Governor in Council.

Appeals of Board Decisions

The National Energy Board is a Court of Record and with regard to attendance, the swearing and examination of witnesses, the production and inspection of documents, and the enforcement of its orders, it has all the powers vested in a superior court of record.

Under section 17(1) of the National Energy Board Act, the Board may review, rescind or change any order or decision

made by it, or may re-hear any application before deciding it. Under section 17(2) of the Act, the Board may change a certificate or licence issued by it, but such change is effective until approved by the Governor in Council. Parties may apply to the Board, pursuant to these sections of the Act, requesting the Board to review an order, decision, licence or certificate. A decision or order of the Board may be appealed to the Federal Court of Appeal providing the appeal is based upon a point of law or jurisdiction. Leave to appeal must be obtained upon application made within one month after the making of the Board's decision or order, within such further times as that Court may allow. Judgments of the Federal Court of Appeal may, with leave, be appealed to the Supreme Court of Canada. The Federal Court of Appeal also has jurisdiction to review and set aside a decision or order of the National Energy Board upon certain stipulated grounds.

The Trial Division of the Federal Court of Canada has exclusive jurisdiction to issue an injunction, writ of certiorari, writ of prohibition, writ of mandamus, writ of certiorari or grant declaratory relief against any federal board, commission or other tribunal.

PUBLIC HEARINGS

uring 1982, the Board conducted all or part of 18 public hearings in locations from Vancouver, British Columbia, to Fredericton, New Brunswick, and in northern Canada, during the course of which it sat for 198 days.

The following summarizes the major decisions rendered in 1982 following public hearings:

Pipeline Certificates And Export Licences

TransCanada PipeLines Limited

llowing a public hearing in November 1981, in January 1982 the Board issued Certificate GC-69 authorizing TransCanada to construct and operate the "North Bay Shortcut", a 420-kilometre pipeline south of the Ottawa River connecting with TransCanada's existing pipeline near Morrisburg, Ontario. The estimated cost of the line was \$403 million.

In February 1982, the Board conducted a public hearing on an application by TransCanada for a certificate to construct and operate about 211 kilometres of pipeline loops in Saskatchewan and Manitoba. Pipeline loops are additional pipeline constructed parallel to an existing pipeline to increase capacity. In April, the Board issued its decision to approve 186.4 kilometres of the applied-for pipeline, and in May, following Governor in Council approval, issued Certificate GC-70. The estimated cost of the new facilities was \$18 million.

Trans Québec & Maritimes Pipeline Inc.

In January 1982, the Board released its decision approving an application by TransCanada to modify the pipeline route

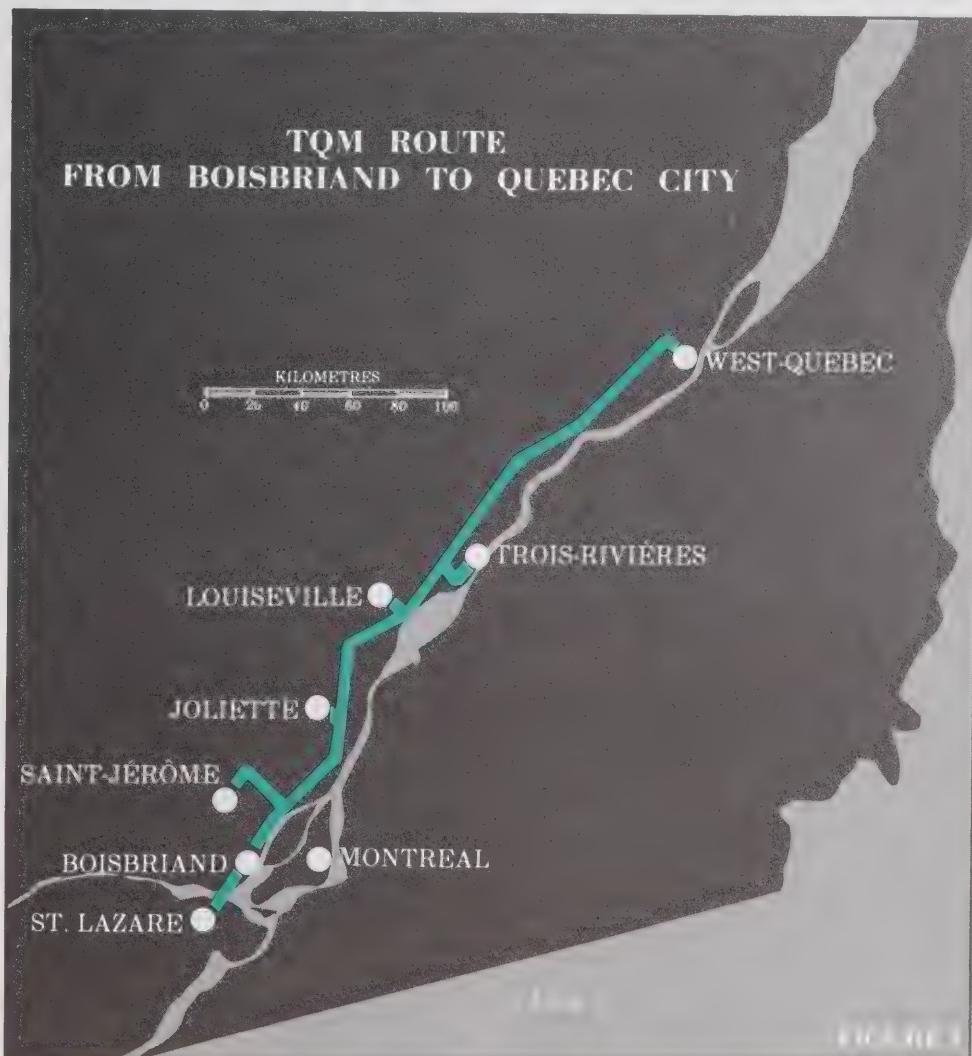
authorized by the Board under Certificate GC-65. (Although TransCanada submitted the application, Certificate GC-65 was later transferred to TQM).

The new route would follow the north shore of the St. Lawrence between Yamachiche, Quebec, and Quebec City, Quebec, instead of the south shore. In its decision the Board stated that the new route, which parallels existing utility corridors, would reduce adverse impacts on agricultural lands and would save about \$7 million through the elimination of a river crossing near Trois-Rivières.

Arctic Pilot Project Inc.

On 2 February 1982, the Board began hearings on an application by Arctic Pilot Project Inc. and an associated application by TransCanada PipeLines Limited.

The Arctic Pilot Project application involves the construction of a natural gas pipeline and liquefaction plant on Melville Island in the Arctic, the transportation of the liquefied natural gas (LNG) in ice-breaking tankers to an eastern Canadian port where the LNG would be regasified, and finally the delivery of natural gas by displacement to Emerson,



Manitoba, Niagara Falls, Ontario, and Monchy, Saskatchewan, for export to the United States.

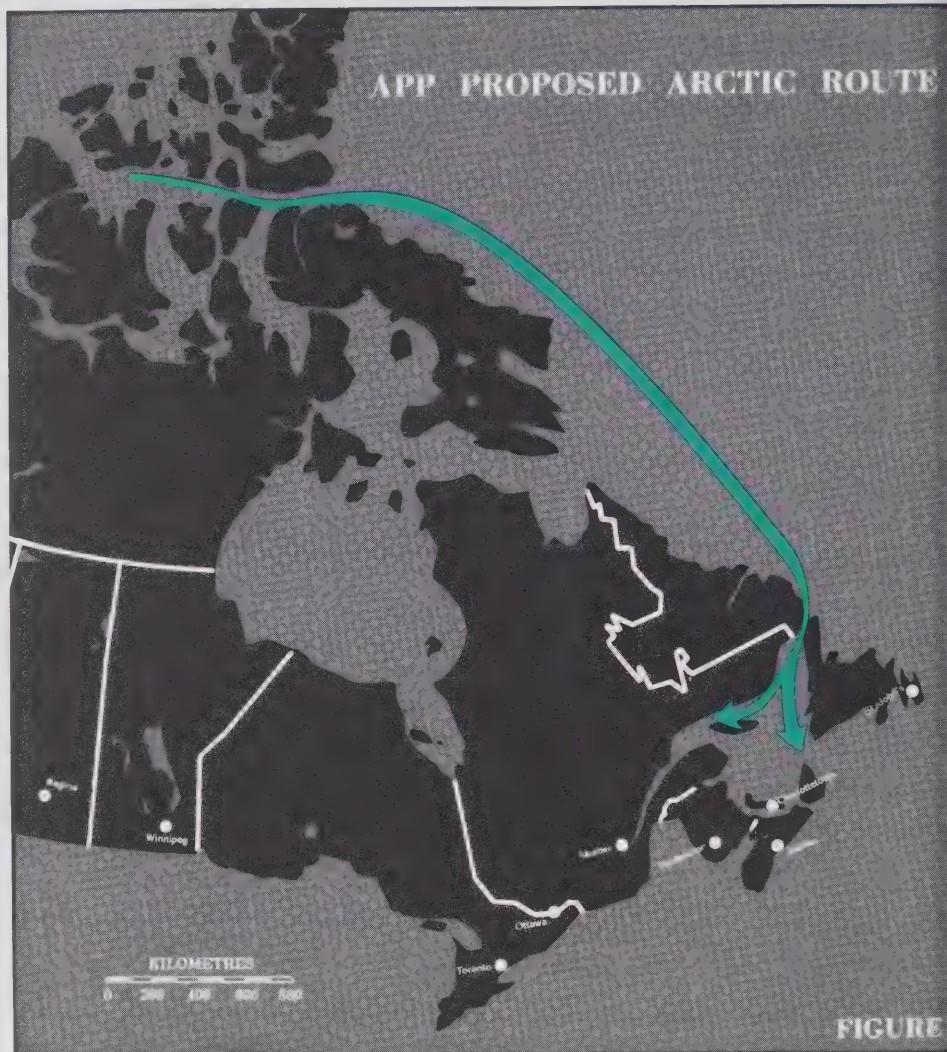
TransCanada applied for a certificate to authorize the construction and operation of the associated LNG receiving terminal and regasification plant to be located at either Gros Cacouna, Quebec, or Melford Point, Strait of Canso, Nova Scotia.

In addition to the Board's regulatory responsibilities for licensing the gas for export and certificating the regasification plant as part of a pipeline system, the Minister of Energy, Mines and Resources in conjunction with the Minister of Indian and Northern Affairs asked the Board to conduct a complete examination of the entire project and to report on all matters the Board considered relevant respecting the present and future public convenience and necessity of the proposed facilities.

In late July, with the hearing continuing, the sponsors of the Arctic Pilot Project announced that they were investigating the possibility of selling the LNG to European markets as an alternative to the United States market. As a result, Trans-Canada requested an indefinite adjournment of its application to construct the regasification terminal in Eastern Canada because an export to Europe would make the regasification facility unnecessary. The Board granted this request on 28 July 1982.

On 31 August 1982, the Board adjourned the hearing on the Arctic Pilot Project Inc. application. The decision to adjourn resulted from a motion by Arctic Pilot Project Inc. to reschedule the hearing and a counter-motion by the Inuit Tapirisat of Canada and the Baffin Region Inuit Association to adjourn the proceeding indefinitely.

In adjourning the hearing, the Board stated in part:



FIGURE

"APP has stated that it is approaching European markets on the basis of essentially the same project which is now before the Board. The Board accepts that this is APP's intention but there can be no guarantee that European purchasers would be of the same mind. APP may find it desirable, in the end result, to negotiate an export which could cause substantial changes to the project. Should that happen, a continuation of the hearing of the northern component at this time would be fruitless. It is possible that much of what would be

heard would have to be re-heard with obvious cost implications. The Board considers the risk of this occurring to be too great to justify proceeding at this time. Therefore, this proceeding is adjourned until APP can come forward with a definitive proposal respecting the export of LNG.

The Board appreciates APP's desire to maintain the momentum of the hearing and is prepared to proceed with it as expeditiously as possible, keeping in mind the need to give parties reasonable notice, as soon as

uncertainty surrounding the project is removed."

as Export Omnibus Hearing

In December 1981, the Board had received sixteen applications for licences to export natural gas or to vary existing licences. The Board decided to consider these applications at a public hearing to be held in 1982.

In light of the rapidly changing conditions in the natural gas industry, the Board judged it timely to review the continuing appropriateness of conditions attached to existing licences to export natural gas.

In addition, during its 1980-81 Inquiry into Canadian Energy Supply and Demand, the Board had received representations that it should modify its procedures for determining the surplus of natural gas available for export. It appeared to the Board that it should review its surplus determination procedures in association with its hearing on export applications.

Accordingly, on 14 December 1981, the Board issued Order No. GH-6-81 setting down the Gas Export Omnibus Hearing, 1982.

The hearing was held in three phases:

- Phase I — The Review Phase
- Phase II — The Licence Phase
- Phase III — The Surplus Phase

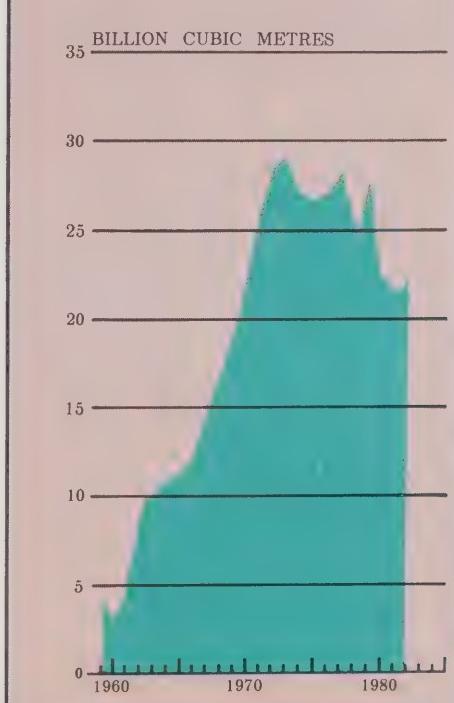
Annual averaging is a condition in some licences which permits the licensee to make up under-deliveries incurred in previous years by exporting at the maximum daily level until the amount exported on a cumulative average annual basis equals the annual exports allowed by the licence.

Phase I

The Review Phase of the hearing was held in Ottawa from 16 March to 6 April 1982 inclusive. During Phase I the Board considered whether any changes should be made to the conditions of existing natural gas export licences and whether the protection procedures for volumes already licensed should be changed. The Board also reviewed the procedure it used to determine the availability of surplus natural gas for export. It also considered other issues related to the terms and conditions of existing and future licences. Among these were whether annual averaging¹ should be removed from licences and whether take-or-pay should be included.

In May 1982, the Board released its decision on Phase I. The Board decided not to make changes in existing export licences and it decided to adopt more flexible procedures for determining the amount of surplus natural gas in Canada available for export. The Board retained the 25A1 criterion (25 times the current year's demand) in its Reserves Formula but decided to base the allowance for exports under existing licences on maximum quantities exportable under existing licence conditions. Previously the remaining term quantity in the licence had been used. The Board also decided to use a Deliverability Appraisal as a guideline, rather than as a rigid test, to determine the annual quantities of gas surplus to foreseeable Canadian requirements. The allowance for exports in the Deliverability Appraisal will be based on a forecast level of exports under existing licences rather than on the maximum authorized quantity.

FIGURE 3
NATURAL GAS EXPORTS TO U.S.



The Board also decided that the additional flexibility afforded by annual averaging conditions was desirable. Furthermore, the Board indicated that it would place considerable emphasis on the existence of reasonable take-or-pay provisions in export contracts, where such provisions were appropriate. The Board did not, however, condition existing licences to include take-or-pay.

The Board recommended to the Governor in Council that amendments be made to its Part VI Regulations that would require licence-holders to file copies of all changes and amendments to gas sales contracts and agreements between exporters and importers and which would prohibit any export of gas pursuant to these changes or amendments until the Board's approval had been obtained. The amendment was approved by Governor in Council on 21 October 1982.

The Board also recommended a further amendment to its regulations to allow it to authorize, by order, the export of natural gas for terms of up to two years. The total of all authorizations for any one year would be limited to three billion cubic metres. This amendment was subsequently approved by Governor in Council and came into effect on 18 November 1982.

Phase II

Following the Phase I decision, the Board provided applicants and other interested parties the opportunity to file new applications or amend existing applications or submissions to take account of the Board's decision.

By the opening of Phase II, the Licence Phase, on 13 July 1982, the Board had received 29 applications for the issuance of new licences or amendments to existing licences, and some 100 interventions. All but four of the applications involved the export of natural gas to the United States; three were for the export of liquefied natural gas (LNG) to Japan or Korea; the fourth application was for an import/export licence for the movement of natural gas through Canada.

In Phase II, the Board examined the economic, contractual, regulatory, and other aspects of the individual applications. It also examined the markets for Canadian gas in the United States and Japan.

Phase III

Phase III, the Surplus Phase of the hearing, commenced in Ottawa on 13 September, continued in Calgary on 27 September and in Vancouver on 4 October, and reconvened in Ottawa on 15 October 1982.

During this phase the Board heard evidence on natural gas demand, supply, and surplus available for export.

The Board's decision on Phases II and III was issued on 27 January 1983.

Right-of-Way Hearings

Under section 74 of the National Energy Board Act, pipeline companies requiring additional lands for the efficient construction, maintenance or operation of a pipeline, may apply to the Board for authority to take the required lands. During 1982, the Board dealt with seven applications pursuant to section 74 of the Act: four concerning TransCanada PipeLines Limited and three concerning Trans Québec & Maritimes Pipeline Inc. As a result of the applications and subsequent public hearings, the Board issued decisions in six of the cases. In one case, TransCanada made an application in respect of certain properties located within the Renfrew-Lanark portion of the North Bay Shortcut. However, subsequent to the hearing, TransCanada settled with all the remaining landowners and withdrew its application.

The first TransCanada application, heard on 12 and 13 November 1981 in Trois-Rivières, involved 18 properties and 16 landowners. TransCanada applied for additional permanent right-of-way and temporary working rights along the route. In its Reasons for Decision dated January 1982, the Board granted authority to take the said lands in all but two cases. In one case, where the Applicant's evidence of need for the additional lands was found by the Board to be insufficient, authorization was denied. In the second case, authority to take the required lands was granted conditionally, subject to the submission of further evidence.

The second TransCanada application was heard at North Bay on 30 March 1982.

The application was made in respect of 92.8 kilometres of pipeline right-of-way along the Nipissing portion of the North Bay Shortcut. Involving one property and one landowner, the application concerned permanent and temporary right-of-way along the pipeline route. The Board, in its Reasons for Decision of April 1982, granted TransCanada the authority to take the additional required lands.

In the third application, TransCanada requested additional permanent and temporary right-of-way along the 10-kilometre Ottawa portion of the North Bay Shortcut. The hearing was convened in Ottawa on 13 April 1982 and involved 6 properties and 6 landowners. In its Reasons for Decision issued in May 1982, the Board granted TransCanada the authority to take the required lands, excepting those properties for which settlements were made during the hearing.

During 1982, Trans Québec & Maritimes Pipeline Inc. also made three applications to the Board under section 74 of the Act. Board decisions regarding these applications were issued in March, May and August 1982. In the first application, Trans Québec & Maritimes requested additional permanent right-of-way, temporary working rights and fee simple lands along 83.6 kilometres of its pipeline route between Boisbriand and Trois-Rivières. The hearing held in Trois-Rivières on 1 and 2 March 1982, involved 55 properties and 50 landowners. In its Reasons for Decision issued in March 1982, the Board granted TQM authority to take all required lands, excepting one property which TQM withdrew its application.

The second TQM application was heard at Quebec City on 20 April 1982. The application was made in respect of 10.5 kilometres of pipeline right-of-way along the St-Maurice River and between 5

ine-de-la-Pérade and St-Augustin-desmaraes. Involving 131 properties and landowners, the application concerned additional permanent right-of-way, temporary working rights and fee simple lands along the pipeline route. The Board, in its Reasons for Decisions issued in May 1982, granted TQM authority to take the additional required lands, excepting those properties for which settlements were made prior to the end of the hearing.

The third TQM application, heard on August 1982 in Quebec City, concerned 41.62 kilometres of pipeline right-of-way between the St-Maurice River and the Batican River. The application, in which TQM requested additional permanent and temporary right-of-way, involved 10 properties and 10 landowners. The Board, in its Reasons for Decision dated August 1982, granted authority to take the additional lands required for the efficient construction, maintenance and operation of the pipeline.

earings on Electrical atters

Ontario Hydro

In April 1982, the Board released its Reasons for Decision recommending the approval of a certificate of public convenience and necessity to Ontario Hydro for an international power line and of an export licence to Ontario Hydro. The applications were the subject of a public hearing held in Ottawa in January.

The certificate would have authorized the construction and operation of a 300 kilovolt, direct-current line to run 103 kilometres under Lake Erie from Nanaimo, Ontario, to near Erie, Pennsylvania.

The licence would have authorized the export of 1 000 megawatts of firm power and up to 8 760 gigawatt hours per year of associated energy for a ten-year period commencing in 1985. The recipient of the export would have been General Public Utilities of New Jersey (GPU).

The certificate and licence were never issued, as on 14 June 1982 Ontario Hydro informed the Board that GPU had cancelled the project.

New Brunswick Electric Power Commission

The Board held a public hearing in November and December 1981 on an application by The New Brunswick Electric Power Commission for ten licences to export electric power, four of which would involve exports from Point Lepreau, Atlantic Canada's first nuclear generating unit.

In April 1982, the Board released its decision approving the issuance of nine of the applied-for licences, including three involving Point Lepreau exports.

One licence request involving the export of a maximum of 130 megawatts of firm power, was denied.

On 3 September 1982, the Governor in Council approved the nine licences.

Following release of the Board's decision, New Brunswick Power applied in July 1982 to have the Board review its decision to deny the 130 megawatts export from Point Lepreau. In early November, the Board held a hearing on the application and delivered its decision in late December. In its decision the Board approved the issuance of the licence to export the 130 megawatts of firm power, its previous concerns over the export having been satisfied.

Cominco Ltd.

Late in December the Board released its Reasons for Decision approving the issuance to Cominco Ltd. of four electric power export licences for a five-year period, from 1 January 1983 to 31 December 1987.

Cominco's application was the subject of a public hearing in Vancouver in October.

The four licences, which received the approval of the Governor in Council, permit Cominco to export electric power and energy as carrier transfers for return to Canada, as sale, equichange, storage or adjustment transfers of interruptible energy, as equichange transfers of miscellaneous firm energy, and as unscheduled circulating power and energy.

Tolls and Tariffs

Alberta Natural Gas Company Ltd.

In May, the Board released its decision arising from the public hearing which was held in March 1982 concerning the tolls and tariffs to be charged by Alberta Natural Gas Company Ltd. for the transmission of natural gas through its pipeline system for Alberta and Southern Gas Co. Ltd, Westcoast Transmission Company Limited and Foothills Pipe Lines (South B.C.) Ltd.

The previously existing tolls were set by tariff order No. TG-1-80 issued to ANG following a May 1980 Decision. The Company had applied to the Board for an increase in its rate of return on rate base from 11.5 percent to 15.18 percent per annum, effective 1 January 1982.

The Board determined that a rate of return on rate base of 13.3 percent per annum effective 1 May 1982 would be just and reasonable.

ICG Transmission Holdings Ltd.

In May, the Board issued its Reasons for Decision on an application by ICG Transmission Holdings Ltd. for approval of tolls to be charged for the transportation of natural gas. The application was the subject of a public hearing held in Ottawa in March 1982.

The Company operates a natural gas pipeline transmission system in Manitoba and Ontario for domestic and export sales.

The Board authorized for 1982 a rate of return on rate base of 15.37 percent per annum effective 15 May 1982. The Company had applied for an increase from 12.25 percent to 16.04 percent.

Foothills Pipe Lines (Yukon) Ltd.

In late August the Board released its decision on an application by Foothills Pipe Lines (Yukon) Ltd. concerning tolls and other financial matters related to the pre-build portion of the Canadian section of the Alaska Highway Natural Gas Pipeline. A public hearing was held on this application at the end of June and beginning of July.

The pre-build portion of the pipeline consists of a Western Leg extending some 213 kilometres from Caroline, Alberta, to Kingsgate, British Columbia, and an Eastern Leg extending some 636 kilometres from Caroline, Alberta to Monchy, Saskatchewan. In its application, Foothills applied for certain changes in the tolls being charged on the Western Leg, which has been in operation since 1 October 1981, and for the resolution of

certain outstanding issues before the Eastern Leg went into operation on 1 September 1982.

The Company was seeking, among other changes, to have the Eastern Leg Final Design Cost Estimates amended to reflect design changes already approved by the Northern Pipeline Agency. These design changes would allow a more efficient utilization of the combined NOVA/Foothills (Yukon) system. The resultant increase in

the estimates, as approved by National Energy Board, totalled approximately \$33 million.

For toll purposes, the Board approved inclusion of the actual costs of construction, up to 31 March 1982, in the rate base for the Western Leg. In the case of the Eastern Leg, the Board approved inclusion in the rate base of actual construction costs incurred in 1981 and the Company's estimate of costs to be incurred in 1982 to complete construction.



ong other issues reviewed by the Board was a request by Foothills to reduce the current rate of depreciation on its prebuild facilities to four percent per annum. The Board granted this request.

The Company also asked permission to include in the prebuild cost of service the recovery of amounts related to mainline preliminary expenditures totalling \$204 million. The mainline refers to the Canadian portion of the Alaska Highway Natural Gas Pipeline which will transport Alaskan gas (i.e., everything north of the build). The Board approved this request, but reduced the total to be recovered at this time by approximately 40 percent, and directed that Foothills undertake to refund these amounts when the pipeline goes into operation.

In September, the Board received an application from Foothills for a review of part of the Board's August decision which concerned depreciation rates. The Board re-opened the hearing in October to determine this and other matters.

The Board's Reasons for Decision were released in November. The Board granted Foothills' request to modify the basis on which rates of depreciation were established, in order to conform with the terms of Foothills' loan agreement with the banks. In addition, the Board reaffirmed its decision that costs associated with the Dempster Lateral* should be excluded from mainline preliminary expenditures in calculating the prebuild rate base.

The proposed pipeline to transport Canadian natural gas from the Mackenzie Delta along a route generally parallel to the Dempster Highway, connecting with the Alaska Highway Natural Gas Pipeline near Whitehorse. The Dempster Lateral comprises Zones 10 and 11 of the Foothills Yukon pipeline.

TransCanada PipeLines Limited

In July 1982, the Board released its Reasons for Decision on an application by TransCanada for an increase in the tolls it charges for the transportation of natural gas in Saskatchewan, Manitoba, Ontario, and Quebec.

The new tolls were, on average, ten cents a gigajoule higher than those previously allowed. This increase was primarily related to the construction of new pipeline facilities, which had caused the rate base to increase by 50 percent, to \$2.4 billion. With the cost of construction of pipelines much higher today than in earlier years, and with the earlier facilities being partly depreciated, there was a significant increase in capital-related costs (depreciation, interest expense, return on equity and related income taxes), which form on average about 80 percent of all costs in the tariff (excluding fuel).

In establishing the new tolls and tariffs, the NEB allowed TransCanada a return of 13.88 percent per annum on its rate base, compared with the 14.31 percent applied for and the 12.63 percent previously authorized.

TransCanada was provided with the opportunity to earn a return on equity of 16 percent per annum compared with 17.25 percent applied for and 15.75 percent previously authorized. This rate of return is based on a deemed capital structure with a 28 percent common equity component compared with 30 percent previously.

The Board also authorized an amount of \$304.6 million for operating and maintenance expenses, which is \$3.3 million less than applied for. This reduction was due mainly to a decrease of \$2.4 million in the

amount allowed for salaries and employee benefits. The Board allowed an increase of 12 percent in 1982 reflecting increases already granted and an increase of 7 percent in 1983.

TransCanada's application for new tolls was the subject of a public hearing held in Ottawa from 11 May to 3 June 1982. The principal issue raised was the appropriateness of the method by which TransCanada calculated its allowance for income taxes. The Board decided that the use of the flow-through method rather than the normalized method of calculating income taxes was more appropriate in current circumstances. Under the flow-through method the Board approves tolls which provide an allowance for income taxes based on the actual taxes payable, rather than an allowance based on accounting income. The use of the flow-through method for calculating the tax allowance meant that the increase in the average toll was limited to 16 percent instead of 24 percent, representing a reduction in the Company's cash revenue of \$89 million, but without affecting the after-tax profit from pipeline operations.

In its decision the Board also approved TransCanada's request for the extension of the Eastern Delivery Area from Boisbriand to a point on the mainline of the Trans Québec & Maritimes Pipeline Inc. system on the north shore of the St. Lawrence River, near Quebec City, for both toll design and cost allocation purposes.

Manito Pipelines Ltd.

Manito is the operator of an oil pipeline system which extends 184 kilometres from Blackfoot, Alberta to Kerrobert, Saskatchewan.

The Company asked the Board to approve tolls, effective 1 October 1982, for

the transportation of heavy crude oil and condensate in Alberta and Saskatchewan. These tolls were based on a rate of return on rate base of 17.11 percent per annum.

This was the first time Manito's tolls were examined through a public hearing. The hearing was held at Ottawa in November. In late December, the Board issued Order No. TO-3-82 to Manito fixing tolls effective 1 January 1983. The Reasons for Decision were released on 4 February 1983. The Board allowed a rate of return on rate base of 14.97 percent per annum.

Inquiry Hearings

Developmental Pricing

As reported in last year's annual report, as Phase II of the Board's 1981 Trans-Canada Rate Hearing, the Board held an inquiry at the request of the Minister for the purposes of reporting to him on the necessity for developmental prices of natural gas in the domestic market and any other matters relevant to the pricing of natural gas in that market. The Board delivered its report to the Minister in November 1981.

In November 1982, the Minister released the Board's report arising from the inquiry. Among its findings and recommendations were:

—the potential quantities of low cost heavy fuel oil need to be reduced if natural gas is to penetrate industrial markets;

—federal and provincial governments should formulate a policy for competing fuels in each region so that consumers will have a sound basis on which to make fuel choices rationally;

—a development price is essential for new franchise areas but not for existing well-established distribution areas. In its report the Board proposed a scheme of developmental pricing for new areas;

—the traditional cost-based "Mcf-mile" (cost of transporting one thousand cubic feet of gas one mile) method of allocating transmission costs in the Trans-Canada system should be retained;

—the three-part pricing system of domestic gas pricing, consisting of the Alberta Border Price plus the two-part transportation toll should be retained;

—TransCanada and TQM should be regarded as one integrated pipeline system for cost allocation and, thus, pricing purposes;

—the existing Eastern Zone on the Trans-Canada system should be retained for pricing purposes but three sub-zones should be established for cost allocation purposes: the current Eastern Zone; Quebec; New Brunswick and Nova Scotia;*

—the Federal Government should establish three separate programs of financial assistance to reduce the wholesale prices for natural gas sales in the Trans-Canada/TQM system;

(a) a transmission subsidy program to reduce the authorized cost of service used to establish cost-based transportation tolls under Part IV of the Act;

(b) a price equalization program to subsidize the price of gas in the easterly TransCanada sub-zones of the Eastern Zone so that it is equivalent throughout the whole TransCanada Eastern Zone;

(c) a developmental price program under which developmental prices would be prescribed under Part IV of the Energy Administration Act and incorporated into TransCanada's tariff. The Federal Government would pay TransCanada the difference between the revenue that would have been received under the non-developmental prices and the revenue actually received under the prescribed developmental prices.

In his statement upon releasing the Board's report, the Minister noted: "The NEB's pricing report contains many significant and productive recommendations on natural gas pricing and marketing. Since the NEB submitted its findings, officials have been working on the development of the proposals and the major ones have now been implemented."

Hearings/Applications In Process

TransCanada PipeLines Limited

In October, TransCanada applied for a certificate authorizing the construction of additional pipeline facilities.

* Additional aspects of the definition of the Eastern Zone are contained in the Report.

The Board is being asked to approve the construction of additional facilities on the Niagara line portion of the TransCanada system in Ontario to meet applied-for port sales and transportation requirements, in addition to forecast domestic sales and transportation requirements on the Niagara line. In 1984, TransCanada proposes to build some 102.8 kilometres of pipeline and one new station consisting of three 12 megawatt compressors and metering facilities. For 1985, the Company seeks authorization to install one new 12 megawatt compressor at Station 9. The total cost of the facilities is estimated at \$349.7 million.

The application is conditional, in part, on receipt of authorization for export of volumes considered by the Board in the Gas Export Omnibus Hearing.

Trans Mountain Pipe Line Company Limited

Trans Mountain Pipe Line Company Limited has applied for approval of an increase in the tolls and tariffs it charges for the transportation of crude oil and other liquid hydrocarbons.

The Company is asking the Board to approve tolls effective 1 January 1983 based on a rate of return on rate base after taxes of 16.175 percent per annum (2.25 percent on debt; 17.0 percent on common equity).

Westcoast Transmission Company Limited

In December 1982, Westcoast Transmission Company Limited applied for certain orders respecting the tolls it charges for

natural gas transmitted and sold to its domestic and export customers.

The Company has also submitted its net Operating and Maintenance Budget for 1983, which totals \$65,363,000 compared with \$65,941,000 in 1982.

Westcoast is seeking the approval of an increase in its return on rate base, before income taxes, from 17.9 percent to 18.97 percent.

to the Interconnection Agreements between Hydro Québec and PASNY and Hydro Québec and Niagara Mohawk Power Corporation (NMPC); blocks of firm power and energy to various utilities in the State of New York; and equichange transfers of firm power and energy with NMPC to supply the St. Régis Indian Reserve near the border between Quebec and the State of New York. The last three licences are requested for a nineteen-year term from 1 January 1984 to 31 December 2002.

The Board plans to hold a public hearing in 1983 to deal with this application.

Trans Québec & Maritimes Pipeline Inc.

On 30 November, the Board commenced a public hearing on an application by Trans Québec & Maritimes Pipeline Inc. (TQM) for orders fixing the just and reasonable tolls to be charged by TQM for the transmission of natural gas and for approval of a tariff for such services.

The tariff hearing will deal with the method of regulation and the form of the gas transportation tariff as well as matters relating to rate base, cost of service, income taxes, and return on rate base. The hearing continued into 1983.

Hydro Québec

Hydro Québec applied in December 1982 for four licences to export power and energy to various U.S. utilities as follows: 111 000 GW.h of interruptible energy to the Power Authority of the State of New York (PASNY) to be exported over thirteen years from 1 September 1984 to 31 August 1997 (the period of delivery could be extended by up to five additional years); surplus power and energy pursuant

GENERAL REVIEW OF THE ENERGY SECTOR

SUPPLY AND DEMAND

Canada endured in 1982 the most severe economic recession since the Depression of the 1930's. Preliminary estimates for 1982 suggest that real GNP fell by about six percent from its 1981 level. Large declines in personal consumer expenditures and in gross fixed capital formation together with substantial decumulation of non-farm business inventories were the major factors contributing to the decline in total output. Moderate growth in merchandise exports, coupled with a marked slowdown in import activity during the first eleven months of the year, resulted in a record \$3-billion dollar surplus in our merchandise trade balance.

After rising at very rapid rates in the first half of the year, price and wage rate increases subsided noticeably during the second half in response to pervasive weakness in aggregate demand and the adoption of income restraint programs by the federal Government, the governments of several Provinces and by the private sector.

In the energy sector, world oil prices in 1982 continued to fall as oil demand fell dramatically in response to depressed levels of economic activity throughout the world. Data as of November 1982 indicate that the average price paid by Canadians for imported crude oil at port of loading (F.O.B. price) had declined by about 11 percent from the March 1981 peak level. Domestic oil prices in 1982 increased as scheduled in the Agreements between the federal Government and the governments of the producing provinces. On average, the price of domestic crude oil at the Montreal refinery gate increased by about 2 percent from its 1981 level although it remained substantially below international prices. The wholesale price of natural gas at the Toronto city gate remained at approximately 65 percent of the price of oil at the Toronto refinery gate as

CANADIAN CONSUMPTION OF SELECTED ENERGIES

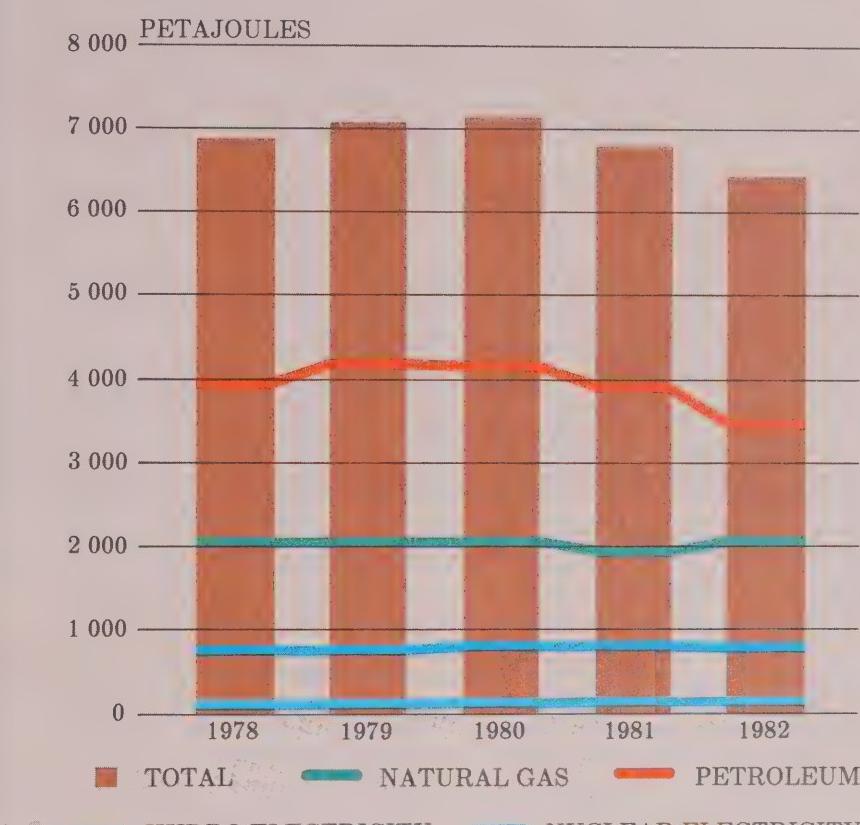


FIGURE 5

established in the Federal/Alberta Agreement. On average, the wholesale price of natural gas at the Toronto city gate increased by about 25 percent from its 1981 level.

The continuing recession, combined with sizeable increases in domestic energy prices, particularly of oil and gas, resulted in a decline in secondary energy demand in the majority of sectors in 1982. Overall, secondary energy demand declined by about two percent in 1982 compared with 1981.

The demand for particular fuels followed a mixed trend across sectors in 1982. While the demand for natural gas in the residential/commercial sector increased substantially under the impetus of lower prices of gas relative to oil and federal Government off-oil initiatives, demand in the industrial sector registered a sizeable decline. Demand for electricity, however, changed only slightly. The recent trend towards a decline in demand for oil, brought about by conservation measures and substitution by alternative fuels, continued in 1982. The decline was particularly severe in the residential/commercial sector.

TABLE 5

Canadian Consumption of Selected Energies

Unit: Petajoules

| | 1978 | 1979 | 1980 | 1981 ^(p) | 1982 ^(e) |
|---------------------|---------|---------|---------|---------------------|---------------------|
| Petroleum* | 3 998.6 | 4 174.6 | 4 164.9 | 3 902.3 | 3 493.0 |
| Natural Gas | 2 014.2 | 2 005.1 | 2 010.1 | 1 966.3 | 2 015.3 |
| Hydro Electricity | 779.2 | 775.6 | 813.1 | 832.5 | 802.2 |
| Nuclear Electricity | 106.0 | 119.8 | 129.1 | 136.1 | 131.1 |
| Total | 6 898.0 | 7 075.1 | 7 117.2 | 6 837.2 | 6 441.6 |

(p) preliminary

(e) estimates

* Includes LPG's

Data on consumption of petroleum includes non energy use.

Based on Statistics Canada publication 45-004. These statistics are on a different basis than those in Statistics Canada publication 57-003 which is used in the preparation of forecasts for Board Energy Supply and Demand reports.

Domestic production of conventional crude oil and equivalent hydrocarbons averaged 217 526 cubic metres per day in 1982, a decrease of 1.2 percent from the 1981 level; however, this comparison must be considered in the light of the Alberta production cutbacks in 1981, the net effect of which was to reduce average daily production in 1981 by 7 186 cubic metres.

As in the previous year, production of conventional crude oil in 1982 was below capacity levels, with an average of nine percent of the productive capacity in western Canada shut-in. However, the shut-in percentage declined from an average of about 19 percent in the first half of 1982 to less than four percent in the second half of 1982.

The output of synthetic oil averaged 19 064 cubic metres per day in 1982, an increase of 7.9 percent from the 1982 level. The two synthetic crude oil plants encountered a number of operating prob-

lems, including a fire at the compressor station of the Suncor plant in January, which shut down the upgrading section for more than six months, and a power failure at the Syncrude plant in September, which affected the cokers. As a result, the plants produced at only 29 percent and 66 percent of their rated capacities of 9 500 and 20 000 cubic metres per day, respectively.

Because of sharply falling product demand and the high cost of inventory maintenance, refineries ran 13.7 percent less crude in 1982 than in 1981. In the face of lower oil consumption, four refineries have announced plans to curtail refinery operations: in Montreal, Texaco has already closed its plant, BP plans to shut down its refinery in the spring of 1983 and Gulf will reduce throughput capacity; in Ontario, Shell intends to mothball its Oakville operation in the spring while Gulf will cut back capacity at Clarkson; in

British Columbia, Gulf is planning to stop production at its Kamloops plant. Industry spokesmen considered it likely that further reductions in capacity would occur.

Direct exports of crude oil and equivalent hydrocarbons to U.S. refiners in 1982 were 24 818 cubic metres per day as compared to the 1981 level of 15 798 cubic metres per day; exports under exchange agreements amounted to 10 039 cubic metres per day, a decline of 7.3 percent over 1981. Bulk exports of refined petroleum products to U.S. customers reached a total of 10 670 cubic metres per day this year, as opposed to 14 836 cubic metres per day a year ago. Licensed exports of aviation and marine fuels used in international transportation at 7 000 cubic metres per day this year were 1 000 cubic metres per day higher than in 1981. Natural gas production* in Canada increased by 2.0 percent from 68 105 million cubic metres in 1981 to an estimated 69 469 million cubic metres in 1982. Sales* of natural gas in Canada during 1982 increased by 1 704 million cubic metres from 1981 levels, an increase of about 4.0 percent. This increase was primarily due to a conversion from oil to natural gas.

Exports of natural gas to the United States amounted to 22 201 million cubic metres or 32.0 percent of total production, an increase of 2.9 percent over 1981 levels. The increase was due mainly to the commencement of exports on the prebuild sections of the Foothills pipeline. Revenues for 1982 were 9.1 percent higher than in 1981, reflecting the increase in sales as well as the increase in the export price of natural gas on 1 April 1981.

* Preliminary

IMPORTS OF PETROLEUM, NATURAL GAS AND ELECTRICITY

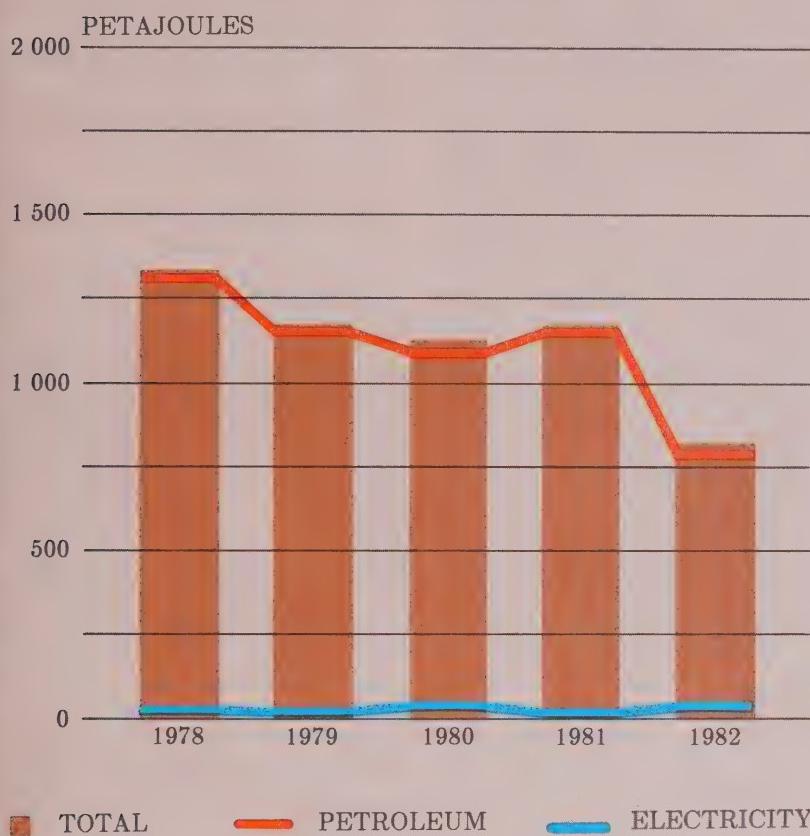


FIGURE 6(A)

TABLE 6 (A)

Imports of Petroleum, Natural Gas and Electricity

Unit: Petajoules

| | 1978 | 1979 | 1980 | 1981 ^(p) | 1982 ^(e) |
|--------------|---------|---------|---------|---------------------|---------------------|
| Petroleum | 1 317.5 | 1 157.6 | 1 112.3 | 1 160.4 | 796.7 |
| Electricity | 22.1 | 18.9 | 31.0 | 15.8 | 30.1 |
| Natural Gas* | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 |
| Total | 1 339.7 | 1 176.6 | 1 143.4 | 1 176.3 | 827.0 |

* Insufficient quantities to show on graph

(p) preliminary (e) estimates

Canada's total net installed electrical generating capability at the end of 1982 is estimated at 81 800 megawatts, up about 9 per cent from 1981. Total Canadian consumption of electric energy in 1982 is estimated to have been 344 029 gigawatt hours, 0.2 per cent less than in 1981. Total exports of electric energy in 1982 were 34 220 gigawatt hours, a decrease of 3 percent over the previous year.

For the first six months of 1982 the total export sales of electricity decreased by 17 percent below the level of the same period the previous year. A significant portion of this decrease occurred on the West Coast due to high water conditions in the U.S. Pacific Northwest region during the winter of 1981-82. The other major factor was the generally weakened demand for electricity in the United States. Export levels recovered significantly in the last 6 months and a record high level of 3 529 gigawatt hours was achieved in October.

Hydro continues to be the main source of electricity for export, averaging 60 per cent, followed by coal at 32 per cent.

EXPLORATION AND DEVELOPMENT ACTIVITY

Oil and Gas Development

As in 1981, the Canadian drilling industry experienced a decrease in the number of wells drilled compared with the previous year. Preliminary estimates show 6 000 wells were drilled in Canada during 1982, a 17 percent decrease from 7 200 wells in 1981, and a 35 percent decrease from the 9 200 wells in 1980.

A total of 4 750 wells were drilled in Alberta during 1982, 1 100 fewer than in 1981. In British Columbia, 105 wells were drilled in 1982 compared with 200 wells in 1981, and in Saskatchewan the total was 760 wells, compared with 830 the previous year. Manitoba was the only western province to show an increase in drilling activity in 1982, with 190 wells, compared with 70 in 1981.

In the Territories mainland, the Beaufort Sea, the Arctic Islands, and in waters off the Atlantic coast, 53 wells were completed, compared with 21 wells in 1981 and 26 wells in 1980.

At year end 1982, the number of drilling rigs available in Canada was 495, slightly from 471 a year earlier. Utilization of drilling rigs was 54 percent in 1982, compared with 59 percent in 1981.

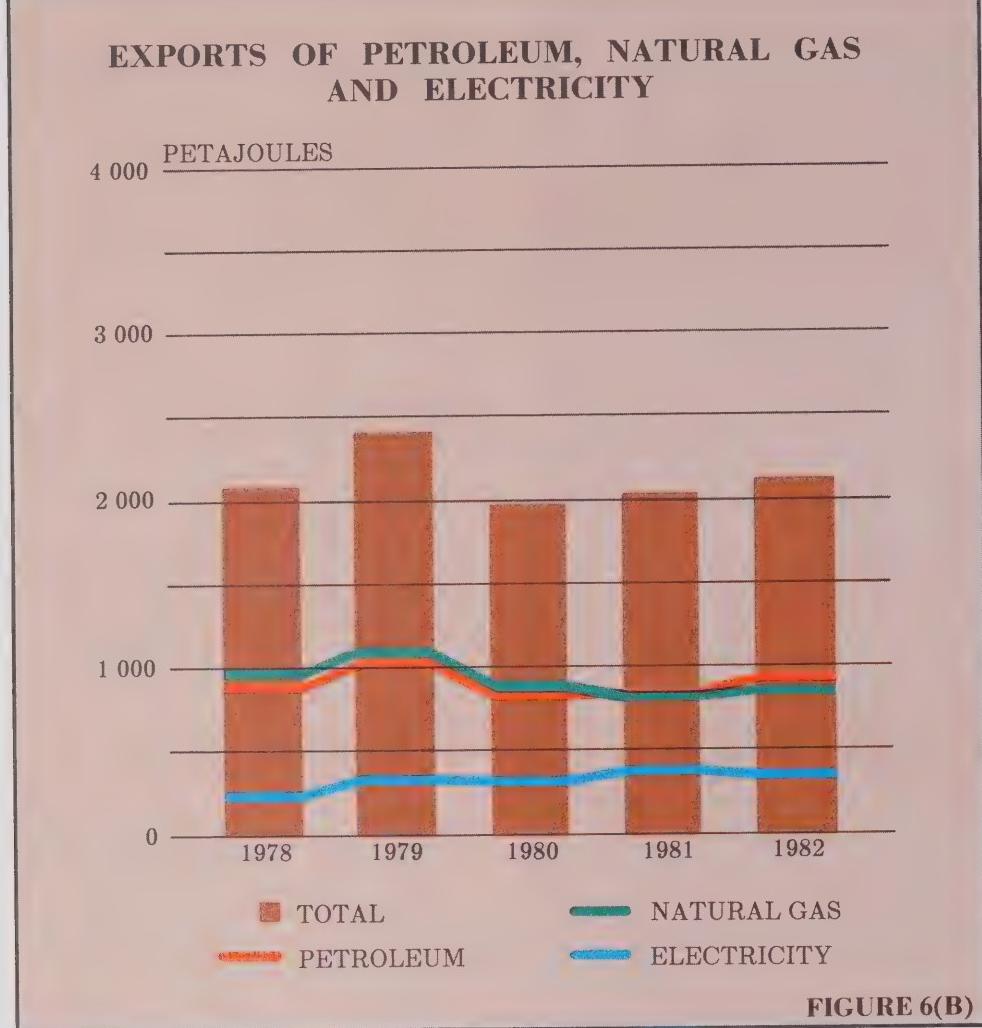


TABLE 6 (B)

Exports of Petroleum, Natural Gas and Electricity
Unit: Petajoules

| | 1978 | 1979 | 1980 | 1981 ^(p) | 1982 ^(e) |
|-------------|---------|---------|---------|---------------------|---------------------|
| Natural Gas | 978.7 | 1 089.7 | 863.1 | 823.9 | 850.3 |
| Petroleum | 881.9 | 1 002.0 | 810.3 | 826.2 | 927.4 |
| Electricity | 227.9 | 331.1 | 318.4 | 373.2 | 361.1 |
| Total | 2 088.5 | 2 422.8 | 1 991.8 | 2 023.3 | 2 138.8 |

(p) preliminary (e) estimates

There were 68 geophysical crews active in Canada at year end, compared with 72 a year earlier. Much of the geophysical activity was in search of oil in Devonian pinnacle reefs in northwestern (Zama, Shekilie-Vardie) and central (Fennell,sey-Stettler) areas of Alberta.

oil production qualifying for the new oil difference price (NORP) coupled with royalty relief for discovery wells generated a high level of drilling activity in several regions.

The following is a summary of significant activity during 1982. (Locations are identified on the accompanying map).

ALBERTA

Drilling activity in Alberta during 1982

was down 19 percent, compared with 1981. The Zama-Shekilde-Vardie area (1), in the extreme northwestern part of the province, continued to be very active in the search for oil and gas in Devonian pinnacle reefs. During the latter part of 1982, the Fenn-Rumsey-Stettler area (2) also became quite active in the search for oil in Devonian pinnacle reefs. Another area where drilling activity continued at a rapid pace during 1982 was the Golden-Evi-Lubicon-Slave area (3), where multizones yielded mostly oil. Discoveries of oil

and gas were still being made in the Deep Basin (4), although drilling activity was reduced compared with previous years. The West Pembina-Niton area (5) was active and Devonian pinnacle reef oil discoveries were reported as well as extensions to existing oil pools. Activity in the heavy oil belt near Lloydminster (6) continued at a reduced rate.

BRITISH COLUMBIA

Drilling activity was reduced significantly



in British Columbia from the previous year. Gas discoveries were reported in the Foothills at Sikanni (7), south of Pocketknife, and in the Grizzly-Thunder area (8). There was some drilling activity in and around established oil pools in the Fort St. John area (9), which resulted from the new oil reference price (NORP) incentive.

SASKATCHEWAN

Drilling was down about 11 percent in Saskatchewan during 1982, compared with 1981. As in previous years, drilling activity was concentrated in the heavy oil belt in the west-central portion (10) of the province. Oil discoveries and/or field extensions were reported in the Estevan-Steelman area (11).

MANITOBA

There was an oil boom at Waskada (12), located in the southwest corner of the province during 1982. The productive zones are of Mississippian and Jurassic age and the wells qualify for the new oil reference price (NORP). Drilling activity in Manitoba during 1982 was more than 2 1/2 times that experienced in 1981.

YUKON AND NORTHWEST TERRITORIES MAINLAND

Development of the Norman Wells field (13) for the purpose of a water flood, resulted in the drilling of 29 wells in 1982. Amoco Pointed Mountain D-1 (L-68) (14) was drilled as a development well in the Pointed Mountain gas field. No hydrocarbons were found and the well was abandoned.

Paramount et al Big Island E-53 (14), which commenced drilling in 1981, was abandoned due to technical problems.

MACKENZIE DELTA-BEAUFORT SEA

Seven wells commenced drilling this year. The wells were Gulf et al Tarsiut N-44A (15), Gulf et al Kiggavik A-43 (15), Dome Aiverk 2I-45 (16), Dome Texaco et al Uvikuk P-66 (17), Esso Pex West Atkinson L-17 (18), Esso PEX Home et al Natagnak 0-59 (18), and Esso Pex Home et al Ityok I-27 (19).

Tarsiut N-44A, and Kiggavik A-43 (15) were the second and third delineation wells drilled to follow-up to the Tarsiut A-25 oil discovery of 1980. Tarsiut N-44A tested oil, however, a considerable amount of water was also encountered. No oil was found at Kiggavik A-43.

Gulf et al Tarsiut N-44 (15), which commenced drilling in 1981 as the first follow-up to the Tarsiut A-25 oil discovery of 1980 was completed in 1982 after finding oil.

Aiverk 2I-45 (16), a wildcat well, was suspended at the end of the drilling season and is expected to be re-entered next year. Uvikuk P-66 (17), and Ityok I-27 (19) were drilling at year end.

West Atkinson L-17 (18), a wildcat well, provided some encouragement when oil was discovered in a new zone after the primary objective was found to be poorly developed. The well is located 10 kilometres northwest of the Imperial Atkinson H-25 oil discovery of 1970.

Dome Nerlerk M-98 (20), Dome Hunt Irkaluk B-35 (20), Dome Hunt Kanaloaak J-94 (20), and Dome Superior Orvilruk 0-03 (21) were all re-entered in 1982, and were abandoned after poor test results.

ARCTIC ISLANDS

A total of six wells commenced drilling the Arctic Islands during 1982.

Cisco C-42 (22), a follow-up to the Cisco B-66 oil and gas discovery of 1981, found only minor amounts of oil and gas. The second well, Cisco K-58 was drilling at year end (22).

Whitefish P-25 (24), a second follow-up to the Whitefish H-63 gas discovery of 1981, found water on tests.

Wildcat well Cape Mamen F-42 (23) and Sculpin E-08 (25) both found water, while Marryatt K-71 (26) was still drilling at year end.

Chevron Muskox D-87 (27), which commenced drilling in 1981, found water and was abandoned in 1982.

EAST COAST OFFSHORE

A total of eleven wells commenced drilling in 1982 off the East Coast; one was completed, nine were drilling at year end, and one was suspended.

Increased activity was witnessed on the Scotian Shelf subsequent to an encouraging two well delineation of the Vent structure.

Six wells, which commenced drilling this year on the Scotian Shelf were at various stages of drilling or evaluation at year end. The wells are Mobil Texaco L-1, Olympia A-12 (28), Mobil Texaco L-1, South Venture 0-59 (29), Petro-Canada et al North Banquereau I-13 (30), Petro-Canada et al West Esperanto B-78 (31), Shell et al Shubencadie H-100 (32), and Mobil et al Bluenose G-47A (33). All were wildcat wells.

Mobil Texaco Venture B-43 (34), a second delineation well on the Vent

OIL AND GAS DEVELOPMENTS SABER ISLAND



structure, which commenced drilling in 1981 was completed in 1982 after significant amounts of gas and condensate were found. Petro-Canada et al Banquereau C-35 (35), which also commenced drilling in 1981, and was completed in 1982, was classified as a non-commercial gas discovery.

Four wildcat wells commenced drilling on the Grand Banks in 1982. The wells were Mobil Bonanza M-71 (36), Mobil et al North Dana I-43 (37), and Mobil et al Linnet E-63 (38). Bonanza M-71 (36) and North Dana I-43 (37) were drilling at year end,

end, while Linnet E-63 (38) was abandoned after no productive zone was identified. Hibernia I-46 (39), the sixth delineation well on the Hibernia structure, was drilling at year end.

Mobil et al Nautilus C-92 (40), a wildcat well which commenced drilling in 1981, was completed in 1982 as a non-commercial oil discovery. Mobil et al Flying Foam L-23 was abandoned, and Mobil et al Hibernia J-34 was suspended in 1982; both wells commenced drilling in 1981.

Petro-Canada et al Pothurst C-19 (41)

was the only well to commence drilling in 1982 on the Labrador Shelf. The well was suspended at the end of the drilling season, and is expected to be re-entered in 1983.

Both Petro-Canada et al Corte Real P-85 (42) and Petro-Canada et al Rut H-11, wildcat wells which were re-entered in 1982, were suspended and both are expected to be active again in 1983.

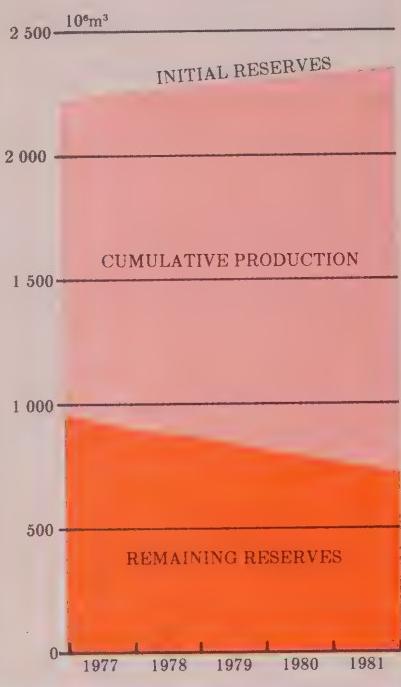
DAVIS STRAIT REGION

Canterra et al Ralegh N-18 (43) was the only well drilled in the Davis Strait Region in 1982. This wildcat well was located approximately 26 kilometres east of the Aquitaine et al Hekja 0-71 gas discovery drilled in 1979 and 1980. The primary objective was indicated to be water-bearing and the well was subsequently abandoned.

OIL AND GAS RESERVES

The Board's estimate of remaining established reserves of conventional crude oil as of 31 December 1981 was 715.5 million cubic metres, 44.2 million cubic metres lower than the 31 December 1980 estimate. Initial established reserves at 31 December 1981 were estimated at 2 336.1 million cubic metres, an increase of 21.8 million cubic metres from the final 31 December 1980 estimate of 2 314.3 million cubic metres. Production in 1981 was 66.0 million cubic metres.

In the Board's June 1981 report, *Canadian Energy Supply & Demand 1980-2000*, established reserves of 50 million cubic metres were credited to the offshore Hibernia field, east of Newfoundland, based on the results of three successful oil wells drilled in the field at the time the estimate was made. The Board's estimate remains unchanged until such time as further information is available. However,

FIGURE 8(A)
**ESTIMATED ESTABLISHED RESERVES
OF CONVENTIONAL CRUDE OIL FROM
CONVENTIONAL PRODUCING AREAS**


| Estimated Established Reserves of Conventional Crude Oil at 31 December 1981 (Million Cubic Metres) | | |
|--|----------------|--------------|
| | Initial | Remaining |
| British Columbia | 78.5 | 24.0 |
| Alberta | 1 828.1 | 577.1 |
| Saskatchewan | 381.9 | 101.0 |
| Manitoba | 28.4 | 7.4 |
| Northwest Territories | 9.5 | 5.4 |
| Ontario | 9.7 | 0.6 |
| Canada Total | 2 336.1 | 715.5 |

Note: Propane, butanes and pentanes plus are not included.

considering other published estimates, as well as its own evaluation of the reservoir

data, the Board recognizes that with additional development the recoverable reserves of the Hibernia field could exceed 150 million cubic metres.

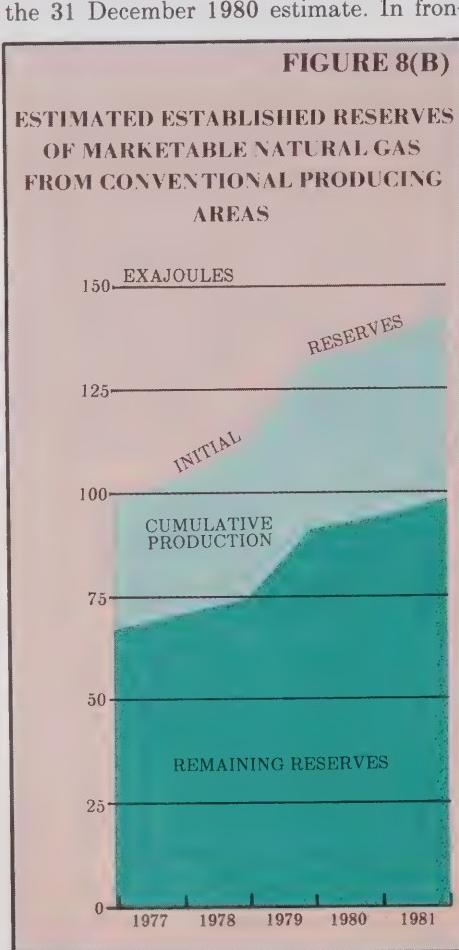
The Board's estimate of remaining established reserves of marketable natural gas in the conventional producing areas as of 31 December 1981 is 80.8 exajoules, 4.4 exajoules higher than its 31 December 1980 estimate. Initial established reserves at 31 December 1981 were estimated at 144.2 exajoules, an increase of 7.3 exajoules from the final 31 December 1980 estimate of 136.9 exajoules. Production in 1981 was 2.9 exajoules.

The estimate for frontier regions is 17.6 exajoules, which remains unchanged from the 31 December 1980 estimate. In front-

tier regions, the Board recognizes established reserves only in the Mackenzie Delta area and in the Arctic Islands at this time.

Net additions to initial established marketable reserves in conventional producing areas during 1981 were 7.3 exajoules. Increases of 5.5 exajoules in Alberta, 0.6 exajoules in British Columbia, and 0.4 exajoules in Saskatchewan were recorded. The unusually high increase for Saskatchewan was due to the inclusion for the first time of shallow gas reserves in the southwestern portion of the province.

**Estimated Established Reserves
of Natural Gas
at 31 December 1981
(Exajoules)**



| | Initial | Remaining |
|---|--------------|-------------|
| British Columbia | 15.4 | 9.5 |
| Alberta | 106.7 | 68.9 |
| Saskatchewan | 2.8 | 1.7 |
| Southern Yukon and Northwest Territories | 0.6 | 0.4 |
| Ontario and Other Eastern Producing Areas | 1.1 | 0.3 |
| Total Marketable Reserves | 126.6 | 80.8 |
| Mackenzie Delta | 5.6 | 5.6 |
| Arctic Islands | 12.0 | 12.0 |
| Canada Total | 144.2 | 98.4 |

REPORT ON OPERATIONS

CRUDE OIL AND PETROLEUM PRODUCTS

The worldwide oversupply of crude oil reased during the year as global demand declined to levels which posed serious problems of adjustment for the oil industry both in Canada and abroad. The effects of weak demand were exacerbated by an unusually deep and longlasting slowdown of world oil stocks while the anticipated strengthening of demand and price which normally occurs during the winter season failed to materialize.

World crude oil prices exhibited weakness throughout most of the year. The OPEC group of producing countries was able to maintain its formal structure of prices but cohesion and influence in the market was undermined by its inability to instill effective production controls and by the increasing availability of oil from non-OPEC countries. Spot market prices were generally below official or contract prices and covert discounting on a wide scale and other forms of preferential marketing clouded the apparent stability of OPEC prices.

The weakness in the crude oil market stemmed directly from the softness of refined product markets, particularly those markets in Europe where refiners' margins became negative in many situations causing widespread refinery closures and sharply reduced operations.

The oil scene in Canada during 1982 was highlighted by a continued decline in demand for petroleum products. Falling demand, product inventory drawdowns and refinery turnarounds contributed to a glut-in of domestic crude which peaked in April but endured until July and recurred again in December when high product inventory levels and anticipated lowering of the Petroleum Compensation Charge in

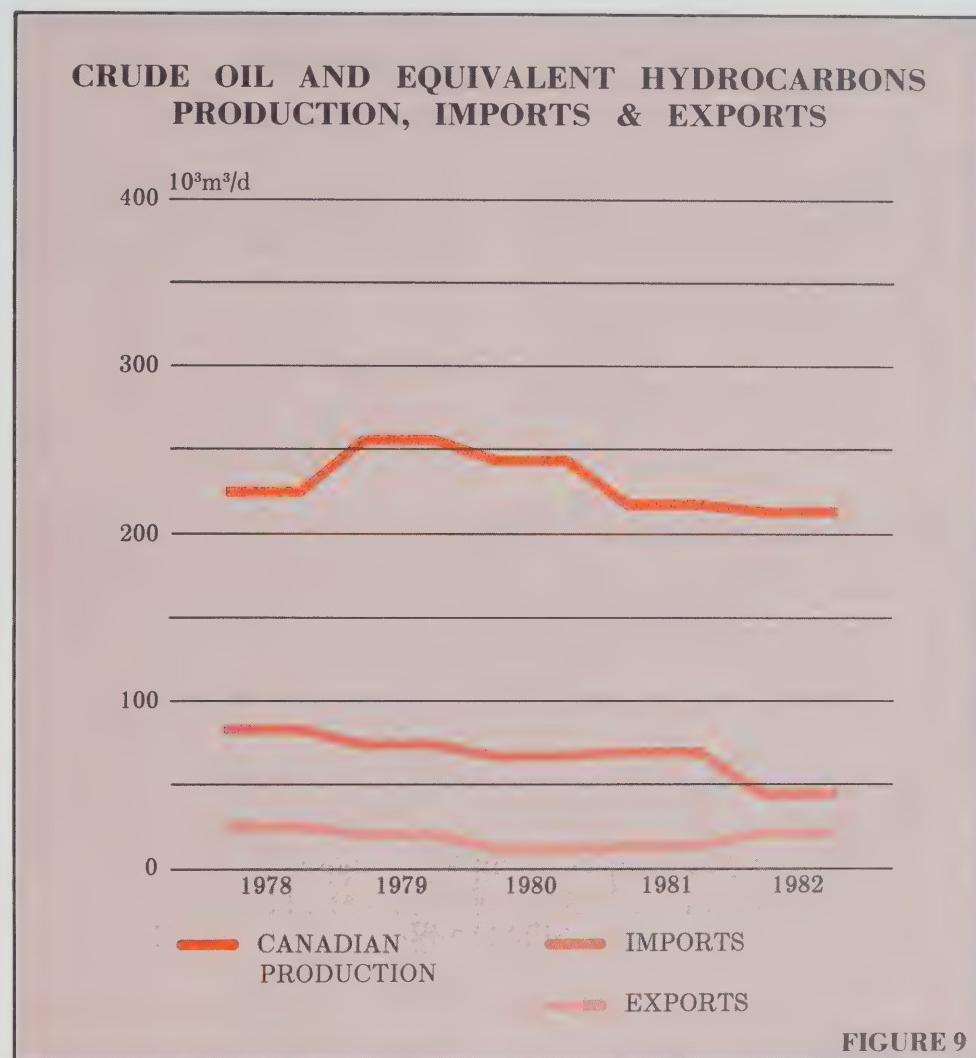


FIGURE 9

TABLE 9

Crude Oil and Equivalent Hydrocarbons Production, Imports and Exports
Unit: $10^3 \text{m}^3/\text{d}$

| | 1978 | 1979 | 1980 | 1981 ^(p) | 1982 ^(e) |
|---------------------|---------|---------|---------|---------------------|---------------------|
| Canadian Production | 227.628 | 256.497 | 244.612 | 220.100 | 217.526 |
| Imports | 86.433 | 76.146 | 69.629 | 71.403 | 45.038 |
| Exports | 27.665 | 24.972 | 14.834 | 15.798 | 24.818 |

(p) preliminary

(e) estimates

combination with the 1 January domestic price increase brought about severe reductions in refinery runs.

Deliveries of domestic crude oil and equivalent hydrocarbons to Canadian refineries dropped by 5.9 percent from 1981 levels. Similarly, crude imports were lower in 1982 than in 1981 by 36.8 percent, not only because of lower demand and inventory reductions but also because of the availability of domestic crude which was not produced in 1981 because of the Alberta cutbacks.

Domestic demand for main petroleum products (gasoline, middle distillates, heavy fuel oil) was lower this year than last by about 10.1 percent with motor gasoline and heavy fuel oil showing the greatest decreases, 7.8 percent and 19.4 percent respectively.

The decline in demand which began in 1980 was reflected by each region but was most severe in Ontario, Quebec and the Atlantic provinces. Refinery crude runs in Canada during 1982 declined by 13.7 percent to 243 600 cubic metres per day. Throughput at refineries in Quebec and the Atlantic provinces averaged 89 200 cubic metres per day compared with 110 300 cubic metres per day in 1981. West of Quebec, refinery runs at 154 500 cubic metres per day in 1982 were 17 700 cubic metres per day lower than a year ago.

The Board's practice of providing a monthly overview of the oil supply/demand balance in Canada to industry representatives and federal and provincial officials was maintained throughout the year.

Prices for domestic crude oil increased on 1 January and 1 July each by \$14.15 per cubic metre.

Crude Oil Allocation, Exports and Exchanges

During the first half of 1982, Canadian refiners reduced their crude oil and product inventories. These reductions, together with the fall in product demand and the attraction of offshore crude oil, caused demand for domestic crude oil to fall to the extent that an average 18 000 cubic metres per day was shut in during the first seven months of the year. The Government introduced changes to the import compensation program which had the effect of placing domestic light crude oil at an economic advantage during the second half of 1982. At the same time the Government began to subsidize movements of domestic light crude oil to the Atlantic region. The Board extended the domestic allocation program to the Atlantic area, enabling the region to obtain a share of available domestic crude oil on a regular basis. As a result, during the second half of the year domestic use of Canadian crude oil was maximized and, as previously mentioned, no shut-in occurred until December.

The continuing drop in demand and maximization in the use of domestic crude oil caused the Sarnia-Montreal pipeline to operate at near maximum sustainable capacity during the second half of 1982. Conversely, Portland pipeline throughputs were at very low levels, just under 8 000 cubic metres per day by December.

Surplus volumes of heavy crude oil continued to be exported to refiners in that area of the northwestern United States known as the Northern Tier. Competitive pricing and the extension of licence terms to one year pushed exports of Canadian heavy crude oil to a record level of 24 500 cubic metres per day for the year. Only small quantities of domestic light crude oil were exported to the United States.

The continuing decline in demand for crude oil by U.S. refiners in 1982 effected a 4.4 percent reduction to 9 349 cubic metres per day in the volumes being exported under mid-continent exchange agreements wherein domestic crude oil is shipped from western Canada to the U.S. Northern Tier and in return U.S. crude oil is returned to Ontario and Quebec via mid-continent U.S. pipelines. One refiner exported an average of 6 000 cubic metres per day under eastern Canadian exchange arrangements, that is to say, that refiner arranged for Canadian crude oil to be transported to a U.S. refiner in return for which an offshore shipment was delivered to eastern Canada via the Portland pipeline.

Bulk exports of licensed petroleum products were 10 670 cubic metres per day, about 28 percent lower than the average for 1981. Effective early in June 1982, export licensing control was extended to asphalt. On 1 June 1982, imports of heavy fuel oil became subject to licensing under the National Energy Board Act Part V. Regulations were amended to allow the Board to issue licences to import heavy fuel oil where the importation would not be inconsistent with the development and utilization of Canadian indigenous energy sources.

In 1982, the Board continued to license exports of marine and aviation fuels acquired in Canada and consumed in international transportation. Such marine fuels continued to be subject to the transportation fuel compensation recovery charge under a program administered by the Board. The transportation fuel compensation recovery charge on aviation fuels was terminated on 31 January 1982. Effective 1 February 1982, the Board established a minimum just and reasonable price for aviation fuels acquired in Canada and consumed in international transportation in order to ensure that

ces paid in Canada would reflect prices prevailing in international markets. Subsequent amendments to the National Energy Board Act prescribe the range of prices at which aviation fuels shall be sold for use in international transportation. During 1982, 7 600 cubic metres per day of marine and aviation fuels were exported under licences issued by the Board.

Under the provision of the Energy Administration Act and Regulations, the Board collected and deposited to the Consolidated Revenue Fund approximately \$50 million in export charges levied on exports of oil and oil products, and approximately \$100 million in transportation fuel compensation recovery charges. The records of reporting companies were examined to verify the accuracy of the charges levied and paid.

NATURAL GAS AND GAS PRODUCTS

Production and sales of natural gas in 1982 showed some improvement over the depressed levels of 1981. Net sales* of natural gas in Canada during 1982 increased slightly, and exports to the United States, in terms of absolute volumes, increased moderately by 2.9 percent from the 1981 levels. Production* in British Columbia was reduced by 8.3 percent while production in Alberta increased 3.3 percent over the 1981 production level.

Natural Gas Production and Consumption

In 1982, production of marketable natural gas increased by 1 364 million cubic metres from the 1981 levels, an increase of 10 percent. Net sales* of natural gas in Canada during 1982 increased by 1 704 million cubic metres, an increase of

approximately 4.0 percent, reflecting the connection of new customers as well as the conversion from oil to natural gas. Consumption in the residential sector increased by 25.2 percent. The commercial sector registered a decline of 1.8 percent, and the industrial sector, which represents approximately 50 percent of total net sales in Canada, decreased by 2.5 percent.

Domestic Natural Gas Pricing

The Petroleum Administration Act (PAA) was enacted in 1975, assigning responsi-

bility for the administration of domestic natural gas pricing to the Board. This Act was amended under Bill C-103, which received royal assent in July 1982. Section 2 of the amendment changed the name of the Act to the Energy Administration Act (EAA). Part III of the EAA provides the Government with the authority to achieve a uniform price, exclusive of transportation and service costs, for natural gas sold within Canada but outside its province, Yukon Territory, Northwest Territories, and offshore area of production. The EAA provides the Government with a mechanism which enables it to

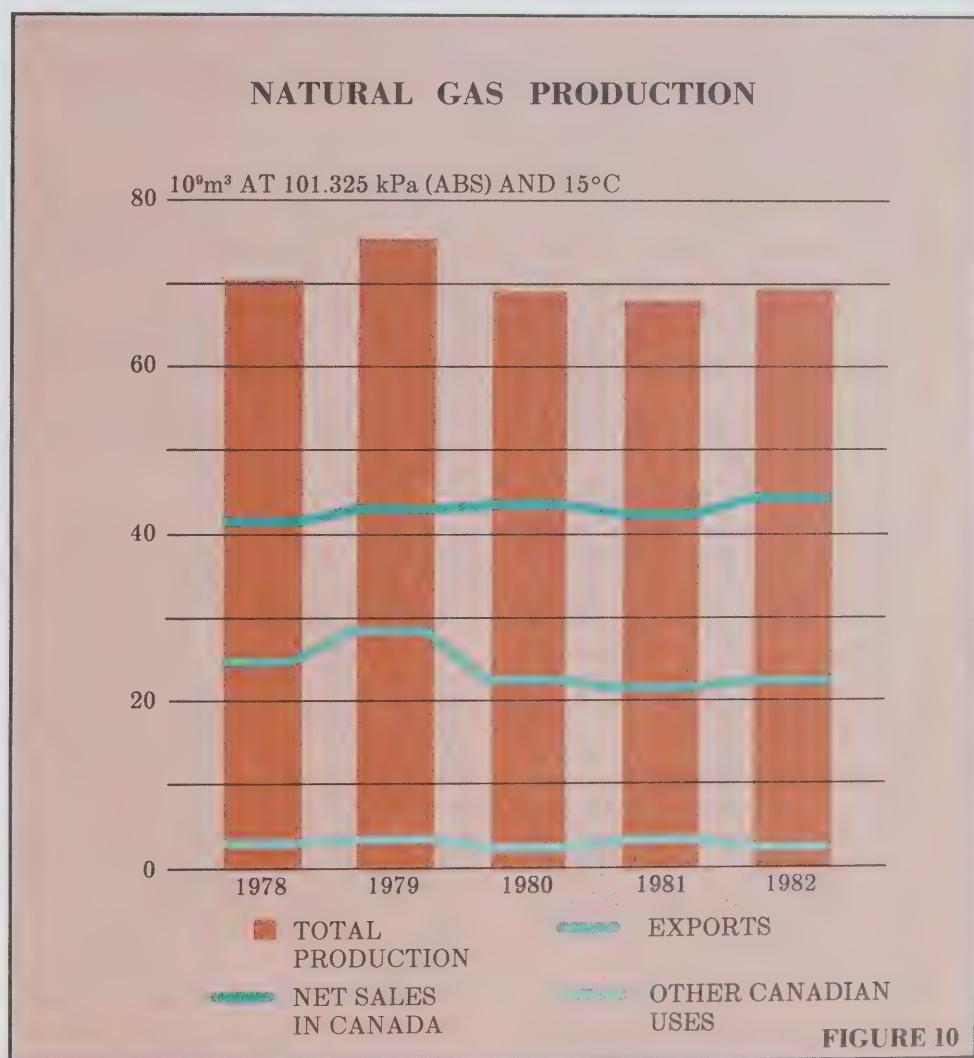


TABLE 10

Natural Gas Production*

Unit: 10^9 m^3 at 101.325 kPa (abs) and 15° C

| | 1978 | 1979 | 1980 | 1981 ^(p) | 1982 ^(e) |
|-----------------------|--------|--------|--------|---------------------|---------------------|
| Net Sales in Canada | 41.745 | 43.495 | 43.901 | 42.886 | 44.590 |
| Exports | 24.961 | 28.344 | 22.563 | 21.584 | 22.201 |
| Other Canadian Uses** | 3.578 | 3.865 | 2.581 | 3.635 | 2.678 |
| Total Production*** | 70.284 | 75.704 | 69.045 | 68.105 | 69.469 |

(p) preliminary

(e) estimates

* Based on Statistics Canada monthly publications 55-002 and 26-006. These statistics are on a different basis than those in Statistics Canada publication 57-003 which is used in the preparation of forecasts for Board Energy Supply and Demand reports.

** Includes Pipeline Fuel and Losses and Other Deliveries.

*** Marketable Pipeline Gas.

achieve a balanced relationship between the prices of natural gas and alternative fuels sold in Canada. Also, the Act helps to achieve a balance between the interests of consumers and producers in Canada, while encouraging the discovery, development and production of natural gas.

Under section 50 of the Act, the Minister of Energy, Mines and Resources may enter into an agreement with the government of a producing province to establish prices for natural gas produced in the province for sale outside that province. On 1 November 1981 a new Federal/Alberta pricing agreement came into effect which established natural gas price increases at the Alberta border at 23.3 cents per gigajoule every six months until 31 January 1987. In 1982 the Alberta border price was set at 193.5¢ per gigajoule and 216.8¢ per gigajoule effective 1 February and 1 August respectively.

Part III.2 of the EAA, "Canadian Ownership Provisions" provides the legislative authority for a Canadian Ownership Spe-

cial Charge on natural gas of 14¢ per gigajoule which has been in effect since 1 May 1981. In addition, under the Excise Tax Act, the Natural Gas and Gas Liquids Tax on marketable pipeline gas was raised to 63¢ per gigajoule from 42¢ per gigajoule, effective 1 February 1982 for the balance of the year.

In August 1981 the Board, at the request of the Minister, conducted an inquiry into the necessity for developmental prices and other matters relevant to the pricing of natural gas in the domestic market. The Board's Report to the Minister on "The Pricing of Natural Gas in the Domestic Market" was released in November 1982. A number of the Board's recommendations were put into place during the year; these included a developmental pricing program for new market areas, the integration of the TCPL and TQM pipeline systems for rate-making purposes, and a transmission subsidy program (a \$500 million grant for construction of pipeline laterals in Quebec has been established).

In accordance with the Minister's policy statement of April 1981 on domestic natural gas pricing, the existing TransCanada eastern rate zone was extended to Quebec City on 1 September 1982. The result is that gas prices prescribed in the province of Quebec are the same as the Toronto city-gate price for the same type of service.

Natural Gas Export Price

The National Energy Board Act requires that the Board study and keep under review matters over which the Parliament of Canada has jurisdiction relating to matters such as the sale of energy and sources of energy within and outside Canada and recommend to the Minister such measures as it considers necessary and advisable in the public interest relating to matters such as the marketing of energy and sources of energy. The Act was amended under Bill C-108. Section 850 of the Part VI Regulations as amended provides the Governor in Council with the authority to make regulations prescribing the price at which oil or gas may be exported. Section 22(2) of the Part VI Regulations as amended requires the Board to provide the Minister with advice relating to the export pricing of oil and gas.

In January 1981, the Board recommended that the export price be raised from \$4.17 (U.S.) to \$4.60 (U.S.) per gigajoule (\$4.94 (U.S.) per million Btu) effective 1 April 1981. This was \$0.95 (U.S.) per gigajoule below the price prescribed by the Duncan/Lalonde agreement. The major factor behind the Board's decision was the continued escalation in OPEC crude oil prices. However, in the light of the economic downturn in the United States and the availability of supplies of residual fuel oil and lower priced indigenous gas, the Board, during the remainder of the year, recommended no further price increases. During 1982, Canadian natural

gas continued to meet competition from residual fuel oil and from United States indigenous gas. This competition, combined with the continuing economic downturn, sustained conservation efforts, as well as a delay in the commencement of exports on the prebuild sections of the Foothills pipeline has resulted in Canadian natural gas exports being approximately 47 percent of the volumes authorized for export during the past year (1 November 1981 to 31 October 1982).

Natural Gas Exports

Natural gas exports to the United States amounted to 22 201 million cubic metres in 1982, approximately 2.9 percent greater than the exports during the previous year. This increase in export volumes, due mainly to the commencement of exports on the prebuild sections of the Foothills pipeline, coupled with the April 1981 increase in the export price of natural gas resulted in revenues for 1982 being some 9.1 percent higher than in 1981.

Ethylene

During 1982 the Board issued two orders for the exportation of ethylene, and an amendment to one of those orders.

Soco Chemical of Canada, a division of Imperial Oil Limited, was issued an order for the exportation of 3 500 000 kilograms of ethylene via tank truck from Fort Erie, Ontario for the period 1 April 1982 to 31 March 1983.

Petrosar Limited was issued an order for the exportation of 9 071 850 kilograms of ethylene via tank truck from Sarnia, Ontario for the period 9 November 1982 to 31 March 1983.

Ethane

No licences were issued by the Board for the exportation of ethane during 1982.

Export Control of Propane and Butanes

In 1982, the Board continued to license propane and butanes for export and to set minimum export prices f.o.b. Alberta applicable to all propane and butanes exports. The Board estimated that during the current export allocation year (1 April 1982 to 31 March 1983) the total net Canadian production of propane will be 6.7 million cubic metres, and 4.0 million cubic metres of butanes.

Canadian requirements for propane were estimated to be 2.9 million cubic metres, approximately 6.6 percent less than the previous allocation year, while Canadian requirements for butanes were estimated to be 1.1 million cubic metres, some 20.4 percent below the corresponding volumes for 1981. In its calculation of domestic supply of propane and butanes, the Board included the domestic volumes remaining in inventory on 31 March 1982, and, in calculating domestic demand, the Board included a contingency volume to accommodate domestic market fluctuations.

The export share of Canadian production of propane remained at the 1981 level of 50 percent. The export share of production of butanes was calculated at 62 percent at the beginning of the 1982-83 export allocation year and was increased to 70 percent in December 1982 retroactive to 1 April 1982. The increase in export share of butanes production was necessitated by the decrease in domestic use of butanes in gasoline blending and as a petrochemical feedstock resulting from the current economic recession.

For the year 1982, the estimated total volume of propane exported from Canada was 4.0 million cubic metres or 50 percent of estimated total net Canadian production. For butanes, the estimated total volume exported in 1982 was 2.8 million cubic metres or 68 percent of estimated total net Canadian production. The predominant market for Canadian exports continues to be the United States. However, in 1982 approximately 12.8 percent of propane exports were to Japan and a minimal volume was exported to Saint-Pierre-et-Miquelon, France. The underground inventory of propane during 1982 ranged from a low of 800 thousand cubic metres to a maximum of 1 273 thousand cubic metres. For butanes, the 1982 inventory ranged from 363 thousand cubic metres to 639 thousand cubic metres. The Board's minimum export prices for LPG, normally established monthly, ranged from a low of 7.5 cents per litre to a high of 12.0 cents per litre f.o.b. Alberta for propane and from 12.5 cents per litre to 17.0 cents per litre f.o.b. Alberta for butanes.

PIPELINE ACTIVITIES

The assessment of applications for the authorization of new pipeline facilities and for additions to existing pipeline systems forms a large part of the Board's responsibilities. A total of 41 of those applications from gas transmission companies were reviewed and approved by the Board in 1982 as compared with 23 in 1981. Appendices G-I and G-II list the certificates of public convenience and necessity and all other related orders that were issued during the year.

During 1982, the Board completed a review of TransCanada's "Line Pipe Integrity Study" and as a result of this review the Board informed TCPL that it would consider applications for site specific pipe replacements.

CAUSES OF PIPELINE INCIDENTS

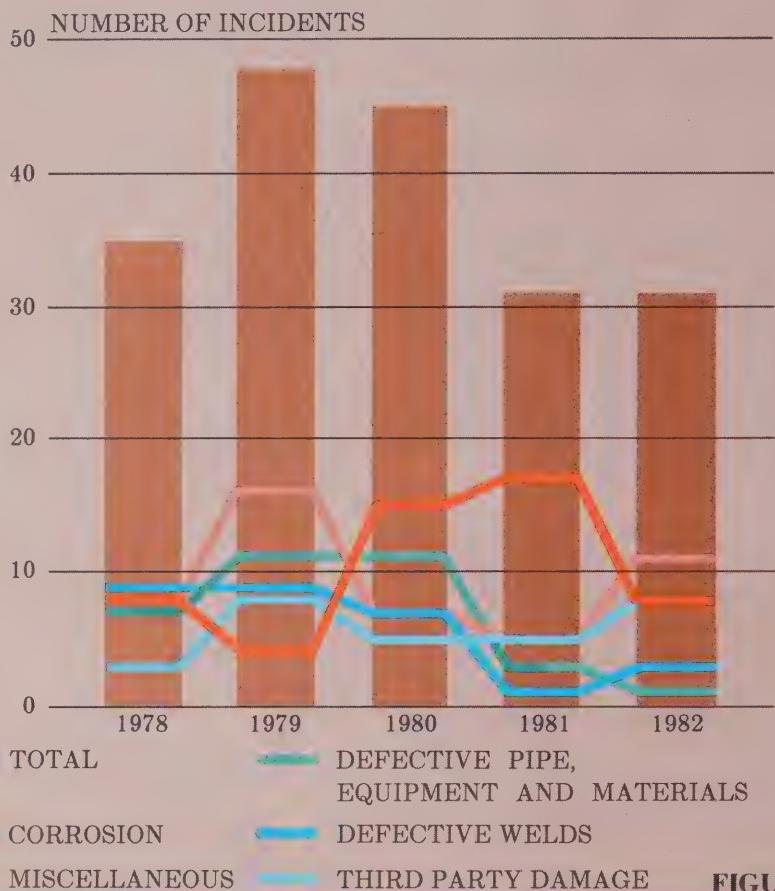


FIGURE 11

TransCanada was also granted Board approval for several smaller projects during 1982, including a check meter station at St-Lazare, Quebec.

In January 1982, Westcoast Transmission Company Limited applied to replace 27.4 kilometres of pipe in the Grizzly Valley sour gas pipeline system. The need for these replacements was established by Westcoast following two failures on the line during 1981. The application was approved by the Board in March 1982. Westcoast also received Board approval during 1982 for the construction of eight new meter stations.

In the summer of 1982, the Board approved applications by Trans Québec & Maritimes Pipeline Inc. for an 8.6 kilometre lateral to Trois-Rivières West, a 14.2 kilometre lateral to Joliette, a 31.1 kilometre lateral to Lachute, a 0.9 kilometre lateral to Louiseville, a 10.1 kilometre lateral to St-Jérôme, and a 20 kilometre lateral to Quebec City West. Meter station applications for each of those laterals were also assessed and approved.

Although there were no applications from oil transmission companies requiring a public hearing during 1982, several other

applications were received. Among these was an application in May 1982 by Interprovincial Pipe Line Limited for the upgrading of its line No. 8 between Sarnia and Millgrove (near Toronto) to high vapour pressure propane service. This application is being reviewed by the Board and a decision is expected early in 1983.

Two other such applications were received from Trans Mountain Pipe Line Company, for the upgrading of seven pump stations in Alberta and British Columbia and from Trans-Northern Pipeline Inc. for modifications at pump and meter stations, in eastern Ontario and Quebec, necessary to permit the completion of the reversal capability of its line. The Board granted approval for each of these applications in October and December of 1982 respectively.

Other miscellaneous projects that were approved by the Board during the year are noted in Appendix O-II, which lists the orders issued during 1982.

Pipeline Construction and Operations

The major portion of the Board's operational and regulatory activities for pipelines deal with the post-certification aspects of construction. That involves the review of alignment sheets, construction techniques, and final design prior to approval of construction. The approval of design changes occurs during construction. Additionally, pipeline welds are subject to radiographic audit, and the hydrostatic testing procedure requires approval prior to testing. Testing results are reviewed as part of the documentation leading toward the approval of each leave-to-open application on completed work. The above activities relate to safety, environmental, and engineering aspects and are subject to approval by the Board.

Construction activities in 1982 included the completion of the remaining portions of the 1980, 1981 and 1982 facilities of TransCanada PipeLines, which consisted of looping, manifolding and compressor stations. Construction on TransCanada's North Bay Shortcut, begun in February 1982, was completed and gas was flowing the first week of December.

A leave-to-open was granted to Trans Québec & Maritimes Pipeline Inc. on 8 February 1982 for facilities constructed

between St-Lazare and Boisbriand. Leave-to-open its facilities as far as Trois-Rivières, as well as for four laterals and meter stations was granted in November and December 1982. Monitoring of the construction phase of the mainline between Trois-Rivières and Quebec City began in the summer and gas is expected to reach Quebec City in 1983.

Following extensive metallurgical studies on breaks which occurred on Westcoast Transmission Company's Grizzly Valley

sour gas pipeline in 1982, 27.4 kilometres of line pipe was replaced during the summer of 1982. Leave-to-open that replacement was given in the fall.

Construction on the Eastern Leg prebuild facilities of the Alaska Highway Gas Pipeline was completed in 1982, as well as the first of two compressor units at the Jenner, Alberta compressor station. An 880-metre line was constructed to bypass the partially completed compressor and metering facilities at Monchy, Saskatchewan.





wan. This construction was necessary since a four-month strike by building tradesmen in Saskatchewan delayed construction of the above-mentioned facilities.

Construction was completed and leave-to-open orders were granted allowing Canadian gas to flow through the Eastern Leg to United States markets on 1 September 1982. The second compressor unit at Jenner, Alberta and the Monchy, Saskatchewan meter station were also completed in 1982.

The Board examined an application by TransCanada PipeLines Limited for use of High Impact Welding on a proposed test section of their 1982 facilities. The test was requested to field test an explosive welding procedure for pipeline construction. The application was approved subject to several conditions; however, TCPL did not undertake the test.

The Board is continuously updating its standards by reviewing the Oil and Gas

Regulations and the Rules of Practice and Procedure with regard to improved methods of technology and safety. In 1982 the Board was also involved with monitoring the safe operation of pipelines by such means as the review of repair techniques, the investigation of problems due to induced currents and the review of reports on pipeline incidents as submitted by companies under the Board's jurisdiction.

Pipeline Crossings by Third Parties

uring 1982, with the enactment of amendments to the NEB Act arising from Bill C-108, the Board increased its jurisdiction from certain specified utility pipeline crossings to any excavation activity in pipeline right-of-way. This authority allows the Board to establish the regulations governing construction procedures and design criteria of utilities which cross pipelines and to review specific construction activities to ensure that the standards will be met.

IPL (NW) Project

In 1981, Interprovincial Pipe Line (NW) Ltd. was issued a certificate to construct approximately 866 kilometres of 323.9 D. crude oil and NGL pipeline extending from Norman Wells, in the NWT to Edam Lake in northern Alberta. During 1982, IPL filed with the Board environmental, socio-economic and engineering studies respecting the pipeline route. The Board has approved the socio-economic and financial material and has approved numerous environmental and technical reports, following which the Board approved right-of-way clearing and associated site development activities. In addition the Board has conducted technical analyses of the design of river and stream crossings, pipeline design with respect to geotechnical data, thaw settlement designs and reviewed geophysical studies and is continuing this analysis.

The Board participated in a routine overflight of the pipeline route in order to view river crossings, facility sites and communities along the route, as well as sensitive raw settlement and terrain areas.

The Board has reviewed and given approval for the Environmental Protection Plan of IPL (NW) as it relates to

clearing and site development activities for the winter of 1982-83. Clearing activities from kilometre posts 0-180 and 347-866 are expected to begin in late January 1983. The Board will, at that time, become involved with the inspection of such activities.

Pipeline Inspection

The Board inspects the facilities of companies under its jurisdiction to ensure that environmental protection measures are being followed, employee and public safety are being protected and facilities are constructed and maintained in a manner which meets the Board's standards.

During 1982, over 1 100 kilometres of pipeline construction were inspected. The Board conducted extensive inspection of construction on both TransCanada PipeLines' North Bay Shortcut and Trans Québec & Maritimes' line from Boisbriand to Quebec City. Inspections included mainline and river crossing construction for both projects, meter station construction for Trans Québec & Maritimes and the witnessing of hydrostatic tests for both lines.

Construction inspection also included the construction activities of TransCanada PipeLines Limited from Swift Current, Saskatchewan to Herbert, Saskatchewan and from Regina, Saskatchewan to Grenfell, Saskatchewan, the Class C construction of Manito on its station expansion at Kerrobert, Saskatchewan and the Grizzly Valley Pipeline Replacement Project of Westcoast Transmission Company.

The locations of a few pipeline incidents were visited to inspect the emergency and safety procedures instituted at the time of the incidents.

Routine operational matters, such as emergency shutdown tests, noise surveys,

operational and safety inspections of pump and compressor stations, and overflights of several pipeline systems were conducted during 1982. Facilities inspected included tank farms, pump and compressor stations, gas processing plants and meter stations.

In order to monitor the follow-up rehabilitative activities required of companies, monitoring reports filed to meet certificate conditions were reviewed and post-construction inspections were carried out on 220 kilometres of pipeline right-of-way in Ontario and Quebec. Those monitoring reports delineate the specific locations of difficult or incomplete rehabilitation of the right-of-way. In addition, they set out the future steps which will be taken by each company to ensure the complete restoration of the pipeline route.

Pipeline Incidents

The Board's involvement with the investigation of the causes of pipeline incidents is part of its efforts to improve the safe operation of pipelines. The knowledge of the causes of most failures is a major factor in improving pipeline standards, operational procedures, technological development, and regulatory requirements.

Most pipeline incidents which occur are reported to the appropriate company, often by property owners, and acted upon before serious damage or injury occurs.

In May 1982, a leak occurred in a pipe joint of Westcoast Transmission Company's pipeline. The analysis of this section provided more information on the problems associated with the Grizzly Valley Pipeline, which ruptured in 1981.

The majority of the incidents due to internal corrosion occurred on Westspur's gathering system. The number of such inci-

SUMMARY OF 1982 PIPELINE INCIDENTS

| | Gas Pipelines | Oil & Product Pipelines | High Vapour Pressure Pipelines | Total |
|---|------------------|-------------------------------|---|-----------|
| Equipment failure | | 4 | | 4 |
| External corrosion | | 1 | | 1 |
| Internal corrosion | | 7 | | 7 |
| Settlement/rock slides, lightning strikes, etc. | 2 | 1 | 1 | 4 |
| 3rd party damage | 2 | 2 | 4 | 8 |
| Defective welds | 2 | 1 | 1 | 4 |
| Other | 2 | 1 | 0 | 3 |
| TOTAL | 8 | 17 | 6 | 31 |

dents has, however, decreased significantly from 1981, in all probability due to Westspur's corrective action initiated during the past year.

Two incidents in 1982 were caused by lightning strikes during severe electrical storms. One of those strikes was to the power transformer of Interprovincial Pipelines Ltd. near Cromer, Manitoba, making it inoperable. The other was to the Blue Hills Compressor Station of West-coast Transmission Company Limited. This strike resulted in an explosion and fire which totally destroyed all wiring, instrumentation and electrical cooling equipment. Neither lightning strike caused loss of oil product or damage to the actual pipe in the ground.

Dents caused by third party damage were reported as pipeline incidents. These were repaired immediately to avoid further damage to the lines involved.

gigawatt hours (1 497 gigawatt hours in 1981) resulting in net exports of 31 375 gigawatt hours (33 875 gigawatt hours in 1981). These net exports constitute about eight per cent of total Canadian generation (about nine per cent in 1981).

Export revenues of about \$1 106 million (\$1 144 million in 1981) and import costs of \$5.4 million (\$5.6 million in 1981) resulted in a net revenue of approximately \$1 101 million (\$1 139 million in 1981).

In 1982 total Canadian electricity exports were three per cent lower than in 1981 and earned three per cent less revenue. The reduction in electricity exports was primarily due to a general decrease in U.S. electricity demand.

Manitoba Hydro is the only major utility that reported large increases in export quantities and obtained a somewhat higher average price. Except for the months of January to April, Manitoba Hydro benefitted from high water flow conditions and exported 46 per cent more than in 1981 and the total revenue increased by 52 per cent. Hydro Québec's export levels were about the same as in 1981 but its total revenue from firm summer sales increased by \$93 million due to a re-negotiated price with its U.S. customer, The Power Authority of the State of New York. Ontario Hydro's exports of firm energy were up substantially but interruptible exports were down. As a result, there was no increase in total exports. Average revenues remained about the same as in 1981. In 1982 both B.C. Hydro and Cominco lost revenue from spilling water and had to accept lower average revenues in order to sell on the United States market. High water levels on the West Coast resulted in electricity surpluses in the Northwest region and contributed to the general reduction in demand for electricity imports by U.S. customers. Overall B.C. Hydro exports

ELECTRIC POWER ACTIVITIES

At the end of 1982 Canada's total net installed electrical generating capability was approximately 81 800 megawatts, of which hydroelectric plants accounted for 49 920 megawatts, conventional thermal stations 23 525 megawatts and nuclear power 5 878 megawatts. Planned changes in 1982 were additions of approximately 4 673 megawatts of hydroelectric, 1 033 megawatts of conventional thermal, and 630 megawatts of nuclear generation. Total generation of electricity in 1982 is estimated to have been 375 400 gigawatt hours, about 0.8 per cent under 1981. Of this, approximately 67 per cent was supplied from hydroelectric generation, 23 per cent from conventional thermal generation and 10 per cent from nuclear generation.

International and Interprovincial Transfers of Electricity

Gross exports of electricity in 1982 were 34 220 gigawatt hours (35 372 gigawatt hours in 1981) and imports were 2 849

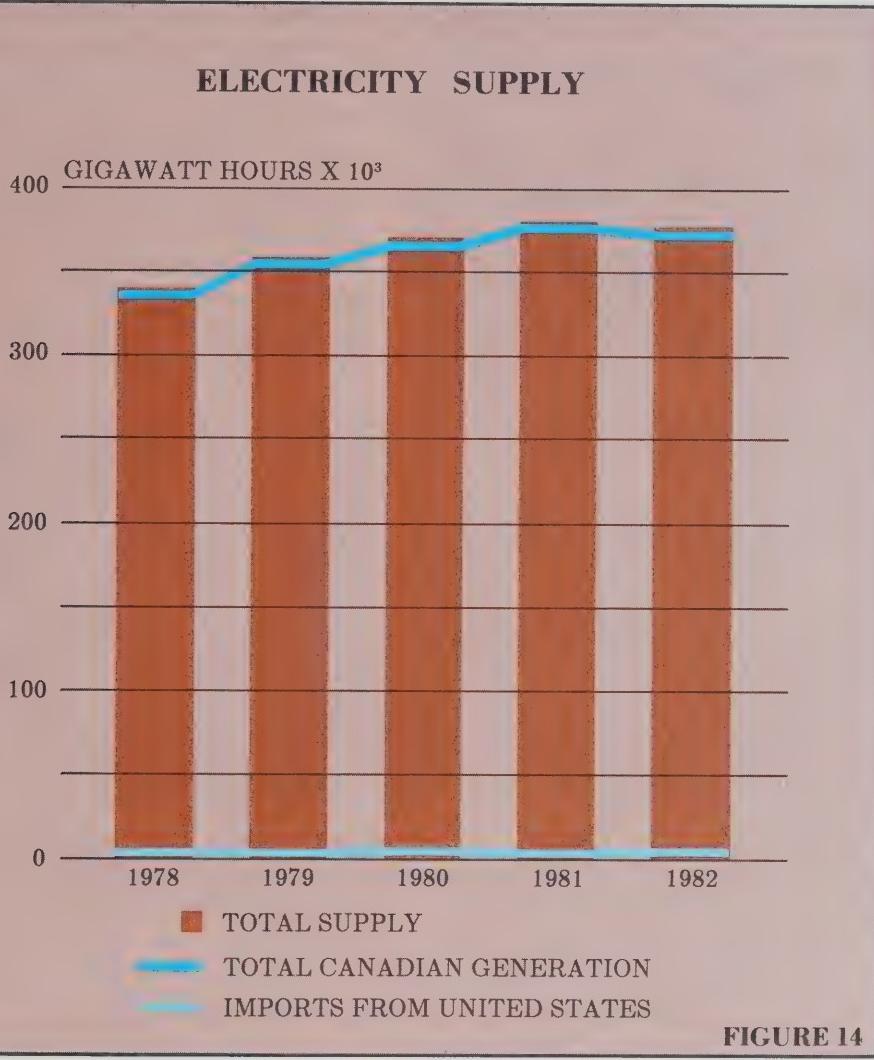


TABLE 14

Electricity Supply

Unit: Gigawatt hours x 10³

| | 1978 | 1979 | 1980 | 1981 ^(p) | 1982 ^(e) |
|----------------------------|---------|---------|---------|---------------------|---------------------|
| Total Canadian Generation | 336.337 | 353.051 | 367.306 | 378.531 | 375.400 |
| Imports from United States | 2.092 | 1.792 | 2.940 | 1.497 | 2.849 |
| Total Supply | 338.429 | 354.843 | 370.246 | 380.028 | 378.249 |

^(p) preliminary

^(e) estimates

approximately 38 per cent less than in 1981 and its revenues decreased by 48 per cent.

Returns submitted to the Board by the major exporting utilities showed that of the exports over the major system interconnections in 1982, 60 per cent of the energy came from hydro generation, 32 per cent from imported coal, 6 per cent from imported oil, and 2 per cent from nuclear and Canadian fossil fuel.

Before electricity can be sold to United States markets it must be offered to neighbouring Canadian markets and be found to be surplus to Canadian requirements. For these reasons the Board monitors Canadian power generation and transfers although it does not regulate these matters.

Electricity supply and demand are tabulated and displayed in Figures 14 and 15. Figure 16 shows exports and imports in 1982 as well as interprovincial transfers for the 12 months ending October 1982.

No certificates of public convenience and necessity were issued in 1982. Related orders issued during the year are tabulated in Appendix E-II.

New licences to export power and energy and related orders issued during the year are tabulated in Appendices E-III and E-IV.

Exports of electric energy under each licence and order during the year are tabulated in Appendix E-V and the total electric energy trade is shown in Appendix E-VI.

Other Electric Power Activities

The report on the output, fuel consumption and operating characteristics of

ELECTRICITY DEMAND

400 GIGAWATT HOURS X 10^3

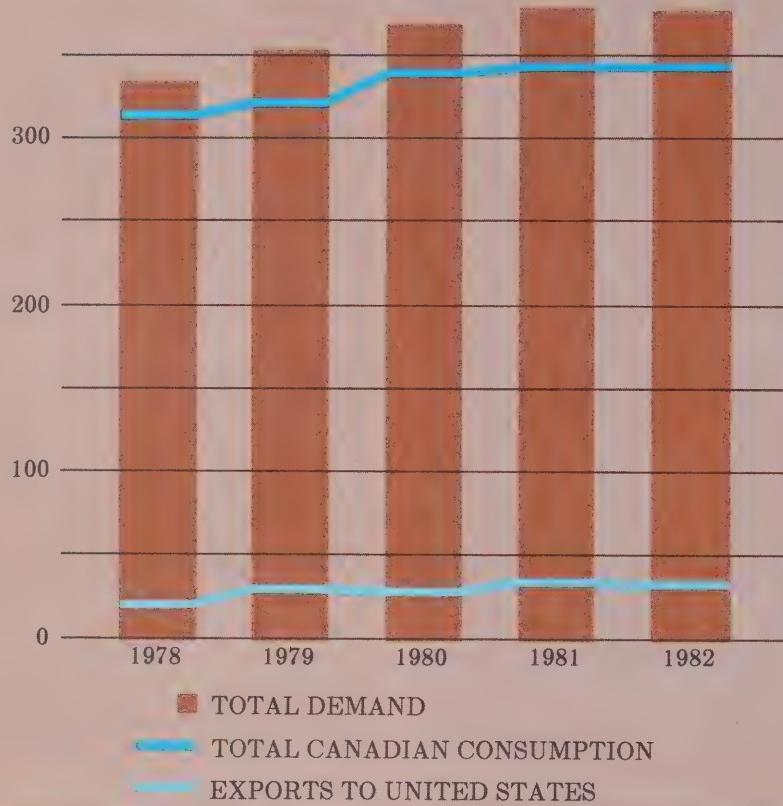


FIGURE 15

Canadian Thermal Generation Stations in 1980 was completed and published in metric units consistent with the government's metrification policy.

Services provided to other departments and outside agencies during 1982 included advice and assistance to the Economic Council of Canada on the electricity sector of their study on Canadian Energy. Electricity supply forecast activities were undertaken as part of the Board's total energy forecast for the Omnibus Gas Hearing. A review is being conducted to determine a clearer assessment of interconnection and pooling benefits in North America.

In addition to the studies and the regulatory work of the Board, staff continued to participate in the updating of the Canadian Electrical Code Part III, and in the meetings of the North American Electrical Reliability Council. Also, several technical papers were presented at the Institute of Electrical and Electronic Engineers on the reliability of interconnected systems and on the economic benefits from energy interchanges.

ENVIRONMENT

Pipelines

Protection of the environment is a major concern of the Board when considering applications, during construction and throughout the monitoring phase. The Pipelines Branch is the principal source of advice to the Board on environmental matters related to pipeline facilities and international power lines.

In considering applications, the Board ensures that an adequate environmental assessment has been carried out, and that the undertakings of the applicants to pro-

TABLE 15

Electricity Demand
Unit: Gigawatt hours x 10³

| | 1978 | 1979 | 1980 | 1981 ^(p) | 1982 ^(e) |
|----------------------------|---------|---------|---------|---------------------|---------------------|
| Total Canadian Consumption | 316.827 | 323.465 | 340.065 | 344.656 | 344.029 |
| Exports to United States | 21.602 | 31.378 | 30.181 | 35.372 | 34.220 |
| Total Demand | 338.429 | 354.843 | 370.246 | 380.028 | 378.249 |

(p) preliminary

(e) estimates

at the environment are appropriate. The Board is also responsible for ensuring that environmental protection measures implemented by the companies are effective. This is accomplished by a team of professional environmentalists to analyse applications, to ensure appropriate measures are in place for construction, to ensure compliance with all environmental protection practices, and to monitor the follow-up rehabilitative activities required of the companies.

During 1982 the Branch undertook an environmental review of several major applications including the Arctic Pilot Project, TCPL 1982 Facilities, portions of the Trans Québec & Maritimes pipeline, The New Brunswick Electric Power Commission export and the Ontario Hydro Lake Erie interconnection.

The Branch reviewed several environmental monitoring reports which were submitted to satisfy the conditions of certificates

issued for various projects including the TCPL 1981 Facilities, the Sault Ste. Marie and Maple to Lisgar loops and the IPL pipe replacements.

Electric Power

The Board is concerned with environmental impacts which may result from the construction and operation of facilities for the generation and transmission of electricity for export. This concern is



GROSS DOLLAR VALUE OF EXPORTS

12 000 MILLIONS OF DOLLARS

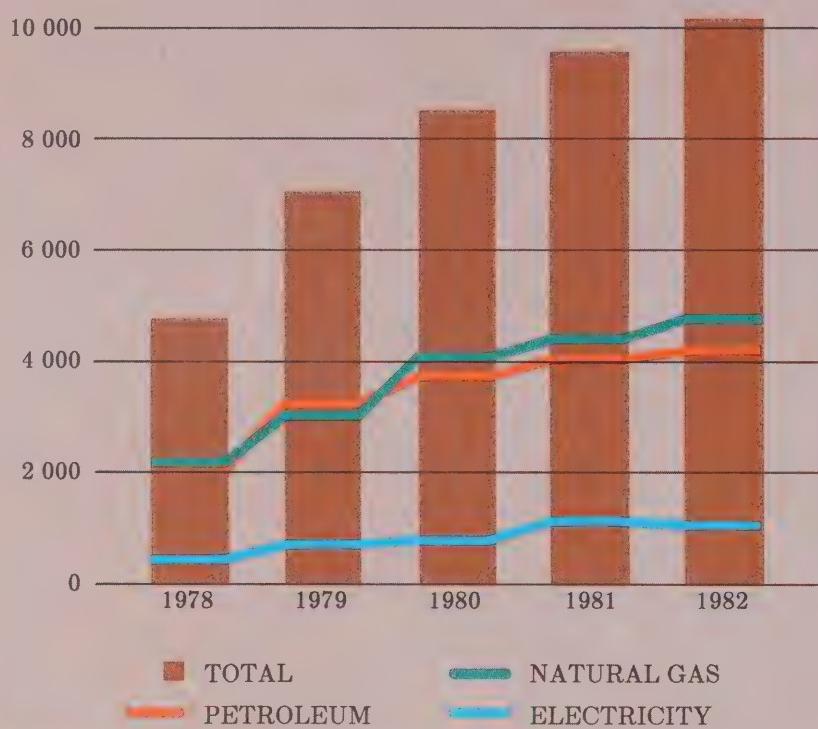


FIGURE 17

TABLE 17

Dollar Value of Exports of Petroleum, Gas and Electricity (Gross)
Unit: Millions of Dollars

| | 1978 | 1979 | 1980 | 1981 ^(p) | 1982 ^(e) |
|-------------|---------|---------|---------|---------------------|---------------------|
| Natural Gas | 2 207.7 | 3 063.1 | 4 035.5 | 4 409.3 | 4 808.6 |
| Petroleum | 2 103.8 | 3 252.7 | 3 694.5 | 4 028.4 | 4 231.2 |
| Electricity | 478.6 | 738.5 | 793.6 | 1 143.9 | 1 105.9 |
| Total | 4 790.1 | 7 054.3 | 8 523.6 | 9 581.6 | 10 145.7 |

(p) preliminary (e) estimates

expressed by the Board's activities keeping abreast of current developments in environmental science and technology by the evidentiary requirements it places upon applicants and by the importance accorded to environmental matters during the licensing and certification process.

Where existing environmental regulations govern a particular activity, for example the emissions of sulphur and nitrogen oxides, particulates or radionuclides, the Board is concerned that all operations related to the proposed export are conducted within the limits of these regulations. Where no established standards exist, the Board has suggested that certain studies such as the evaluation of social costs be undertaken by the applicant.

In 1982, the Board considered the environmental impacts of three applications for electricity exports. The first was The New Brunswick Electric Power Commission's application to export a portion of the Point Lepreau nuclear station output. It was shown that the export would result in some increased incremental environmental impact and social costs from increased in-province fossil fuel generation. The evidence showed that Point Lepreau would operate at full capacity whether or not exports were made and would be operated within the limits of applicable regulations. The Board found that there were no direct incremental environmental impacts and social costs attributable to the operation of Point Lepreau for export purposes and that the incremental costs resulting from increased fossil fuel generation would be small relative to the values of the exports.

The second case was an application by Ontario Hydro to construct a direct current interconnection under Lake Erie and to use it to export electricity derived from coal and nuclear generation to the Public Utilities of New Jersey. The application

ant satisfied the Board that construction and operation of the submarine cable and ground electrodes would have minimal effects on aquatic life, marine activities, human safety and adjacent electrical equipment operation and mechanical integrity. The Board found that because of planned mitigative measures, the export would not result in a net increase of emissions in Canada except, possibly, in 1985. It was also expected that the export would displace U.S. generation resulting in a decrease in emissions there.

The third case was an application by Dominionco Ltd. to export hydraulically-generated electric energy to various U.S. customers. The evidence showed that there would be no measurable environmental impact resulting from generation or transmission of energy for export since Dominionco's power system would remain unchanged with or without exports. The Board found that the export would result in no adverse environmental effects.

CONOMIC MATTERS

Extensive economic evaluations, analyses and studies were undertaken by the Board during the year. Submissions and matters of related interest were reviewed and assessed, and investigations were undertaken on economic viability, cost-benefit, regional socio-economic problems, Canadian content and natural gas surplus tests. Considerable analysis was undertaken related to the economic aspects of the Gas Export Omnibus Hearing, including cost-benefit analysis, commercial viability, and preparation of macroeconomic and energy demand projections. The Arctic Pilot Project involved Canadian content, cost-benefit and socio-economic matters.

Further improvements were made in the Board's energy demand models used in the analysis and evaluation of submissions as well as in the preparation of the

Board's projections. Revisions were completed to the equations and data input to the Demand Forecast model and a more complete integration of a number of the sub-models has taken place.

Further cooperation between the Board and federal government departments in a continuing attempt to improve the quality of energy data resulted in the establishment of an interdepartmental working group on energy statistics. Computerization of the Board's data banks continued at a rapid rate and a number of refinements in the reconciliation, identification and collection of energy data was instituted to assimilate the mounting quantities of relevant information.

FINANCIAL REGULATORY MATTERS

During the year, the Board continued its monitoring of the accounting practices and financial results of oil and gas pipeline companies under its jurisdiction. This was accomplished through analysis of periodic or special reports required by the Board, and by ongoing field examinations. These examinations were carried out to verify compliance with the Board's Uniform Accounting Regulations, and with specific directives issued by the Board in relation to accounting, toll and tariff matters, such as the treatment to be accorded particular items of rate base or cost of service.

Gas Pipeline Uniform Accounting Regulations which came into effect in September 1969 were amended by the Board and will be published in early 1983.

A major review of all matters related to the financial regulation of pipelines under the Board's jurisdiction was initiated in 1982.

The Board is in the process of amending its toll adjustment procedures in order to

make them applicable for the first time to Trans Mountain Pipe Line Company Ltd. and Trans-Northern Pipeline Inc. Prior to this change, the procedures were applicable only to Interprovincial Pipeline Limited and Cochin Pipe Lines Ltd. Under these procedures these pipelines could apply for revised tolls and tariffs to reflect routine changes in throughput, rate base and cost of service. Such application would not require a public hearing, provided there was no change in the principles or the rate of return established in a previous Board decision. During the year, five tariff revisions were allowed pursuant to these procedures.

Amendments to the National Energy Board Act which took effect in July 1982 included provision for the authorization of interim tolls, subject to refund. The first Board Order under this provision was issued in September, in respect of tolls for Trans Québec & Maritimes Pipeline Inc.

The Board began the process of amending its Rules of Practice and Procedure to include the information required to be filed by,

- (a) an oil pipeline company applying for an order fixing tolls and tariffs under Part IV of the Act, and
- (b) an oil or gas pipeline company applying for authority to construct pipeline facilities under Part III of the Act.

Various other information filing requirements were reviewed with a view to consolidating them where possible. Discussions were held with pipeline industry representatives to explore the possibility of reducing the amount of information required to be submitted, particularly by smaller pipeline companies.

In July 1982 the Petroleum Administration Act was amended, including changing the name to the Energy Administration Act. Under the provisions of the Act

and its supporting Regulations, the Board continued to be responsible for the audit of the oil and oil product exports reported to the Board. This responsibility includes the collection of the export charges levied thereon, which in 1982 resulted in deposits to the Consolidated Revenue Fund of approximately \$650 million.

Effective 1 May 1981, pursuant to Part I of the Energy Administration Act, the Board became responsible for the collection of export charges which apply to aviation and marine fuels used by foreign and domestic carriers travelling in international commerce. These charges ceased to apply to aviation fuel in February 1982. The Board has administered the collection of approximately \$100 million in Transportation Fuel Compensation Recovery Charges on marine fuels in 1982.

LEGAL MATTERS

Appearance Before Restrictive Trade Practices Commission

The Restrictive Trade Practices Commission invited the Board to make available a representative of the Board to provide background information for the Commission's Petroleum Industry Inquiry. A senior member of the Board's staff appeared before the Commission to speak to the international trade in oil. Further appearances before the Commission are expected in the coming year.

Litigation

CP AIR

Canadian Pacific Air Lines Limited has launched an action in the Federal Court of Canada, Trial Division, against the Attorney General of Canada and the Board seeking a declaration that the National Energy Board Act does not

require that consumption of aviation fuel on CP Air's international flights be licensed under the Act, and that the Board has no jurisdiction to issue licences in respect of such fuel or to set minimum prices for the sale of such fuel to CP Air by its suppliers. Licensing of the export of such fuel has been in effect since May, 1981. A statement of defence has been filed in the Court. It is expected that the action will come to trial in 1983.

ARCTIC PILOT PROJECT INC.

The Board has been involved in the following legal matters with regard to the APP application.

On 15 October 1980, Arctic Pilot Project Inc. applied to the Board for a licence under Part VI of the Act for the export of natural gas from Canada to the United States of America. The Arctic Pilot Project involves the construction of a natural gas pipeline and liquefaction plant on Melville Island in the Arctic, the transport of the liquefied natural gas ("LNG") to eastern Canada and the export of natural gas to the United States of America. The Board also received an application dated 15 October 1980 by TransCanada PipeLines Limited for a certificate under Part III of the Act for the construction and operation of an LNG receiving terminal and regasification facilities at Gros Cacouna, Quebec, or Melford Point, Strait of Canso, Nova Scotia, and for orders under Part IV of the Act relating to traffic, tolls and tariffs.

On 25 September 1981, Inuit Tapirisat of Canada ("ITC") and the Baffin Region Inuit Association ("BRIA") brought a preliminary motion requesting, among other things, that TransCanada be required to elect between the Gros Cacouna, Quebec and Melford Point, N.S. terminal sites. ITC/BRIA requested that this motion be heard prior to the commencement of the

public hearing of the Arctic Pilot Project. The Board held a preliminary sitting commencing 2 November 1981 to hear the motion together with other motions.

On 2 December 1981 ITC/BRIA applied to the Federal Court of Appeal under section 18(1) of the Act for leave to appeal the Board's decision of 5 November 1981 which refused ITC/BRIA's motion to require TransCanada to elect between the Gros Cacouna, Quebec and Melford Point, N.S. terminal sites. The application was argued before the Federal Court of Appeal on 29 January 1982 and the Court dismissed the application.

DOME

In January 1980, the Board amended two certificates held by Dome NGL Pipeline Ltd. and Cochin Pipe Lines Ltd. authorizing the construction and operation of two high vapour pressure pipelines between Sarnia and Windsor, in the Province of Ontario. Certain of the amendments to the Certificates required the companies to upgrade their pipelines in accordance with the requirements for Part X of the Board's Oil Pipeline Regulations relating to high vapour pressure pipelines. The two companies applied for leave to appeal the Board's decision on the basis that the Oil Pipeline Regulations were being applied retroactively to the two pipelines. On 12 February 1980, the Federal Court of Appeal granted the companies' application for leave to appeal. While the appeals remain pending in that Court, discussions between counsel have taken place in an attempt to settle the appeals. It is anticipated that details of the settlement will be finalized in the very near future.

SASKATCHEWAN POWER

In January and February 1982, Saskatchewan Power Corporation and Manitoba Islands Pipe Lines Limited applied pursuant to section 17 of the National Energy

Board Act for an order reviewing and rescinding four orders issued by the Board to TransCanada PipeLines Limited under Part IV of the Act insofar as those orders directed TransCanada to charge the Applicants the Imputed Alberta Border Price specified in the orders and disallowed the price stipulated in an agreement between the Applicants and Trans-Canada. The Applicants maintained that in a decision rendered on 17 December 1981, the Supreme Court of Canada held that the Board was without jurisdiction to substitute in its Order No. TG-1-76 the Imputed Alberta Border Price for the price fixed under the contract, and that, therefore the orders in question should be reviewed and varied. In August 1982, the Board dismissed the application for review and the Applicants sought leave to appeal the Board's decision. The Federal Court of Appeal granted the companies' application for leave to appeal on 30 September 1982, and the Notice of Appeal was filed on 1 October 1982.

Saskatchewan Power Corporation and Many Islands Pipe Lines Limited also filed an application under section 28 of the Federal Court Act to review and set aside the Board's decision dismissing the application for review and variation of the four orders.

Subsequent to the launching of the appeal and the section 28 application, the Board wrote to the parties involved noting that the implementation of the judgment of the Supreme Court of Canada, pronounced on 17 December 1981, was an issue in the above-mentioned appeal. The Board noted further that the judgment of the Supreme Court of Canada was not certified to the Board for implementation, and that rather than implementing the judgment by way of section 17(1) of the National Energy Board Act, it would be more appropriate to deal with the implementation of the judgment as an

administrative matter under section 53 of the Supreme Court Act. Upon receipt of responses from the Appellants and Trans-Canada, the Board amended Order No. TG-1-76 and the three other orders in question to delete reference to the Imputed Alberta Border Price in relation to the Saskatchewan Zone Sales Service.

In light of the amendment to these orders, the Board is awaiting an indication from the Appellants as to the status of the appeal and the section 28 application.

LEGISLATION AND REGULATIONS

The functions and responsibilities of the Board were summarized earlier in this report. In this connection, during 1982, the following changes were made to the relevant legislation and regulations:

AMENDMENTS TO THE NATIONAL ENERGY BOARD ACT

Bill C-108, which is an Act to amend the National Energy Board Act, was promulgated on 23 July 1982. Sections 12 and 31 which relate to international powers, and section 32 which relates to interprovincial power lines came into force on 1 February 1983.

These amendments to the National Energy Board Act broaden the Board's jurisdiction with respect to international power lines, the allocation of oil and gas, and refine the Board's jurisdiction in relation to oil and gas export prices. The amendments also clarify the Board's ability to make conditional orders, certificates of licences and confer jurisdiction to issue interim orders.

The Governor in Council is authorized to extend the operation of the Act to interprovincial power facilities designated by him. The Governor in Council has also been given the power to direct the Board to assume supervision and control of the movement of oil and gas out of a province or the offshore area.

These amendments tighten the enforcement provisions of the Act in an effort to give the Board the ability to stem violations of the Act by providing for major penalties in situations where offences are committed by officers of corporations. The Attorney General of Canada is now able to initiate proceedings against companies as well as corporate officers and agents. Evidence constituting corporate criminal liability can be adduced from the actions of its

employees. The amendment will also give a customs officer various enforcement powers under the Customs Act with respect to exports and imports of oil and gas. Where oil or gas is seized pursuant to the provisions of the Customs Act, it can be immediately disposed of in accordance with the regulations made by the Governor in Council pursuant to section 85 of the Act.

The amendment relating to the Board's new powers to make interim orders and conditional orders, and to issue certificates and licences, include the powers to provide in an order, certificate, or licence that it, or any part of it shall only come into effect at a future specified time, on the happening of any specified event or condition, or upon the performance, to the satisfaction of the Board, of some condition specified in the order, certificate or licence and the power to make an order on an interim basis pending final disposition of a particular matter. In other words, the Board may provide in an order, certificate, or licence that it shall only remain in force for a specified time or until the happening of a specified event.

The power to make interim orders is the basis upon which the Board may direct, in a subsequent order, that a company refund a part of its tolls or recover amounts in subsequent tolls under the new section 52.2.

The National Energy Board Part VI Regulations

These regulations were amended to extend export controls to asphalt to provide a means of acquiring accurate data on export volumes and pricing so as to ensure that Canadian requirements are met before an export of asphalt occurred.

Another amendment to these regulations increased the limits for export of electric power and energy that the Board can

authorize by order, without a public hearing. Such exports are normally required for border accommodation where the United States customer lacks ready access to service from a United States utility.

The other amendments arose out of the Gas Export Omnibus Hearing, 1982. The first permits the National Energy Board to authorize by order, without the requirement of a public hearing, short-term exports of natural gas for a maximum of two years provided that the total of all such authorizations in any one year does not exceed three billion cubic metres. Such exports would be required either to replace exports authorized by long-term licence but not made owing to regulatory or construction delays, or to allow companies to take advantage of new market opportunities.

The second requires gas licence holders to file copies of all changes and amendments to gas sales contracts and agreements between exporters and importers and prohibits any export of gas pursuant to these changes and amendments until the Board's approval has been obtained.

Oil Pipeline Regulations

Bill C-108 changed the definition of gas in the NEB Act to "gas means any hydrocarbon or mixture of hydrocarbons that, at a temperature of 15° C and a pressure of 101.325 KPA is in a gaseous state...".

The definition of "high vapour pressure pipeline" in section 2 of these regulations was amended because the new definition of gas effected by Bill C-108 would otherwise cause the liquefied hydrocarbons transported by high vapour pressure pipelines to be classified as gas and therefore not subject to the Oil Pipeline Regulations.

Gas Pipeline Regulations

The purpose of the amendment was to redefine the definition of pipeline and to add a new section 4.1 "Transportation of Gas". This section requires that hydrocarbons which fall within the definition of gas, but which are in a liquid state when being transported, be transported in pipelines designed and constructed in accordance with Part X of the Oil Pipeline Regulations rather than the Gas Pipeline Regulations.

Substituted Service Regulations

The proclamation of Bill C-60 changes the procedures for approval of the detailed route for rights-of-way for energy transmission facilities under federal jurisdiction and for the acquisition of and compensation for additional lands required. Substituted Service Regulations provide for the service, other than personal service, of a notice on a landowner, required under the Act.

Gas Pipeline Uniform Accounting Regulations

These regulations were amended to bring the text of the Regulations in line with modern accounting practices and in line with the text of the Uniform Accounting Regulations for oil pipeline companies.

Records Retention Project

In 1981, the Treasury Board initiated a program to reduce and standardize the time period during which various types of records must be kept by the private sector. The Board amended certain Regulations under the National Energy Board Act and Energy Administration Act, to specify the period of time that companies are required to keep certain records, to bring them in line with the Treasury Board Record Retention Project.

The following Regulations are in the pro-

cess of being amended:

- Pipeline Companies Records Preservation Regulations
- Gas Pipeline Uniform Accounting Regulations
- Oil Pipeline Uniform Accounting Regulations
- Gas Pipeline Regulations
- Oil Pipeline Regulations
- National Energy Board Act Part VI Regulations
- Energy Administration Act Part III Regulations

ENERGY ADMINISTRATION ACT REGULATIONS

The National Energy Board is responsible for administering the provisions of Parts I, I.1 and III of the Energy Administration Act and it was necessary in 1982 to amend the following regulations:

Energy Administration Act Part I Regulations

The purpose of these amendments was to change the title of the Regulations as a result of the amendments to the Petroleum Administration Act and also to put into place the administrative and financial procedures to permit the Federal Government to share with the producing provinces fifty percent of its revenues from the charges collected on oil exports.

A further amendment to these Regulations provides that the penalty payable pursuant to subsection 13(3) of the Energy Administration Act, upon late payment of the export charge for oil and oil products, shall be one percent of the amount of default for each month or part thereof.

Transportation Fuel Compensation Recovery Charge Regulations

These Regulations were made under Part I.1. of the Act in order to:

- a) designate particular types of fuel as being fuel for use by an aircraft;

- b) set out the information that is required to be contained in a return and the form of the return;
- c) require that the payment of transportation fuel compensation recovery charges be sent to the Board; and
- d) require that a person who wishes to apply for a refund of the charges send an application to the Board.

Natural Gas Prices Regulations, 1982

These regulations which fall under Part III of the Act, were amended a number of times during 1982 to take into account, inter alia, changes in prices paid for the sale of gas outside its province of production occasioned by changes in "Alberta Border Price" and costs of transportation approved by the Board.

REGULATORY REFORM

During 1982 three major initiatives were commenced in the field of regulatory reform:

1. To provide the public with advance notice of forthcoming regulatory actions and with information on the status of ongoing proceedings, the Board started the publication of a regulatory agenda. The first issue was distributed on 1 March 1982 and new editions are now being issued quarterly.
2. To reduce the paper burden on the private sector, the requirements of companies to preserve records were being eased. The Energy Administration Act has already been amended for this purpose, and various regulations under both that Act and the National Energy Board are in the process of being amended.
3. To simplify and clarify the Board's proceedings, a major re-writing of the Rules of Procedure has been initiated. In due course, copies will be distributed for public comment.

SPECIAL STUDIES AND REPORTS

because of increasing concern over rising pipeline construction costs, and because actual costs were exceeding by significant amounts the estimates placed in evidence at public hearings, the Board requested its staff to undertake a study of pipeline construction costs. The study included an investigation of the rates of increase in the various components of pipeline costs and their causes, together with a comparison of experience in Canada and the United States. It is anticipated that this study, which was released in July 1982, will contribute to an improvement in the accuracy of cost estimates in facilities applications, enabling the Board to better evaluate proposals for construction of new pipelines. The Minister has now established a Task Force to determine what action might be undertaken by the various parties involved, including contractors, unions, pipeline companies, regulatory agencies, to remedy or curtail the cost increases.

In November the Board in cooperation with McGill University's Centre for the Study of Regulated Industries convened a conference in Montreal on the "Regulation of Pipelines in an Inflationary Era". The main theme of the conference was tariff levelling. The conference succeeded in raising participants' awareness concerning the difficult issues which must be faced and in encouraging discussions of potential solutions.

In September 1982, the Board presented a brief on frontier transportation of oil and gas to the Special Committee of the Senate on the Northern Pipeline. The brief outlined initiatives being taken with a view to improving the effectiveness of the Board's own regulatory functions. It then focussed on suggestions for further improvements in the broader regulatory processes involved in authorizing the construction of major energy projects as well as in controlling their construction. These processes also involve the relationships between the roles of the Board and those provincial and territorial governments

as well as departments of the Federal Government. The suggestions were concerned with the problems involved in ensuring that the regulatory process does not unduly hamper the implementation of projects found to be in the public interest.

ORGANIZATION OF THE NATIONAL ENERGY BOARD

There were no changes of substance in the organization of the Board in 1982, which is shown in the organization chart. For the fiscal year 1982-83 the Board's budget is \$21.2 million with a person-year allocation of 447. The Board provides service to the public in both official languages.

Executive Director

The Executive Director is responsible for the day-to-day administration of the Board, including the acquisition and allocation of human and financial resources and the ensurance of efficiency and effectiveness in Board activities and operations. The Director of Projects and Plans is responsible for strengthening the effectiveness of staff support particularly for

public hearings, and planning, and co-ordinating work of staff teams to meet the requirements of the Panels.

Director General Energy Studies

The Director General, Energy Studies, is responsible for ensuring effective coordination and synthesis of all matters relating to energy demand, supply and surplus, conducting major energy studies which are broad in scope and involve a wide range of disciplines, Part II inquiries respecting energy supply, demand and surplus and integration of information and processing systems and services for the Board.

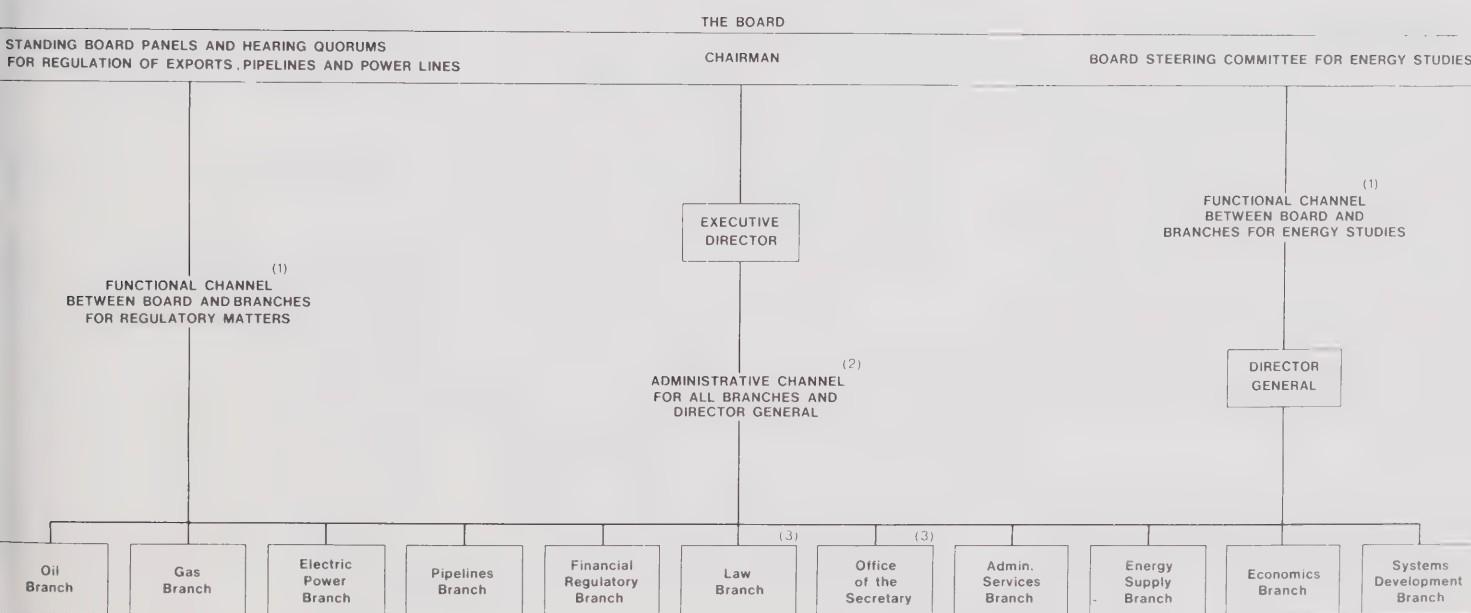
Administrative Services Branch

The Administrative Services Branch is responsible for the coordination and administration of policies and the provision of advice and services in areas of finance, personnel, general administration, official languages, and security.

Economics Branch

The Branch advises the Board on economic and socio-economic matters, long-term energy demand, and macro-economic forecasting for the Canadian economy. The Branch also maintains an energy statistics unit.

NATIONAL ENERGY BOARD ORGANIZATION CHART



(1) Functional means pertaining to activities having a primary relationship to the Board's statutory duties.

(2) Administrative means pertaining to activities primarily concerned with management of the Board's staff and the provision of human and financial resources.

(3) The Secretary and General Counsel have quasi-legal duties and report directly to the Chairman on certain matters.

The Branch analyses the impact of proposed energy projects on the Canadian economy, on regional economies, and on the net economic benefit to Canadians. It also considers the socio-economic impact of such projects and assesses the extent to which Canadians will have an opportunity to participate in projects ("Canadian Content").

Electric Power Branch

The Electric Power Branch is responsible for electric export licensing, international power line certification, and regulatory surveillance. The Branch also prepares supply and demand forecasts for electricity for use in dealing with electrical or other applications, keeps under review the United States market for electricity, and provides advice to the Board on matters relating to the production, transportation, sale and exchange of electricity over which the federal government has jurisdiction.

Energy Supply Branch

The Energy Supply Branch is responsible for advising the Board on matters of oil and gas exploration, drilling and production, forecasting trends in oil and gas supply from conventional, oil sands, and synthetic sources, and independently calculates the reserves and deliverability of gas and the reserves and producibility of oil. The Calgary office of the Energy Supply Branch is engaged in the individual pool calculation of gas and oil reserves.

Financial Regulatory Branch

The Financial Regulatory Branch has the prime responsibility for rates, tolls and tariffs under Part IV of the NEB Act and Part II of the Northern Pipeline Act, financial advice in relation to Parts II, III, and VI of the NEB Act and the adminis-

tration of the collection and audit of petroleum export charges and costs of transportation related to Parts I and III of the Energy Administration Act. It also is responsible for the auditing of the accounts of pipeline companies under the Board's jurisdiction and for monitoring the financial performance of pipelines.

Gas Branch

The Gas Branch is the focal point for all gas and gas product related regulatory activity pursuant to Part VI of the NEB Act and for the monitoring and control of all matters associated with the Board's obligations for the administration of Domestic Gas Pricing under Part III of the Energy Administration Act. The Branch also plays a supportive role in all regulatory activity with respect to gas and gas products pursuant to Parts II, III and IV of the NEB Act.

Law Branch

The Law Branch is responsible for advising the Board on its powers and their legal application to the Canadian energy industries under the Board's jurisdiction, including the possible effect of the application of such powers.

Office of the Secretary

The Office of the Secretary provides administrative control and coordination of all matters brought formally before the Board or panels of the Board, prepares and maintains custody of agenda, minutes, statutory documents, and other official Board records, receives and issues all communications of the Board, and provides the Board with public relations services, a library information centre, and drafting and graphics arts facilities.

Oil Branch

The Oil Branch is responsible for providing advice in the general area of oil related energy matters including export charges, crude oil and petroleum products export licensing, control of international oil exchanges, allocation of domestic crude oil, questions of oil markets, processing, distribution, and the short-term balance of supply and demand for feedstocks and oil products. These are matters within the ambit of Parts I and II of the Energy Administration Act and Parts II, IV and VI of the NEB Act.

Pipelines Branch

The Pipelines Branch is principally responsible for matters relating to pipeline certificates issued under Part III of the NEB Act. It is the principal source of advice to the Board on capital and operating costs, engineering, safety, right-of-way and environmental matters pursuant to the Board's responsibilities under Parts II, IV, V and VI of the NEB Act and under the Northern Pipeline Act, with respect of pipelines.

Systems Development Branch

The Systems Development Branch is responsible for computer systems services and data processing support to the Board, including consultative service on computer operation, data management and program design and development. It also provides an advisory service to ensure the availability and introduction of the latest data processing techniques and applications and the provision of computer hardware and software sufficient for and corresponding to the Board's operational environment.

OFFICE OF THE EXECUTIVE DIRECTOR

J. St.G. Stephens Executive Director
S. Klenavic Director, Projects and Plans

ENERGY STUDIES

J.W. Vollman Director General

ADMINISTRATIVE SERVICES BRANCH

J.H. Goldstein Director
J. Grace Assistant Director, Administration
J.J. McNamara Assistant Director, Finance
L. Thompson Assistant Director, Personnel

ECONOMICS BRANCH

J.L. Miles Director
vacant) Assistant Director, Economic Analysis
S. Oh Assistant Director, Macroeconomic Forecasting
B. Harsanyi A/Assistant Director, Demand Forecasting
J.H. Shaw Assistant Director, Planning and Coordination

ELECTRIC POWER BRANCH

J.S. Bell Director
N. Karas Assistant Director, Planning
J. Olszewski Assistant Director, Operations

ENERGY SUPPLY BRANCH

J.A. Hiles Director
vacant) Assistant Director, Geology and Reserves
J. Poole Assistant Director, Gas Supply
.C. Hos Assistant Director, Oil and Alternative
Energy Supply

FINANCIAL REGULATORY BRANCH

J.S. Johnson A/Director⁽¹⁾
J. Yeates Assistant Director, Research and Special Studies
J. Brown A/Assistant Director, Gas⁽²⁾
A.A. Martinson A/Assistant Director, Oil
W. Bigelow Chief Auditor, Northern Pipelines

GAS BRANCH

J.R. Ironstone Director
J.L. Browne Assistant Director, Gas Industry and
Market Analysis
J.S. Green Assistant Director, Gas Regulations
and Licences

LAW BRANCH

| | |
|------------------|---------------------------|
| F.H. Lamar, Q.C. | General Counsel |
| H. Wetston | Assistant General Counsel |

OFFICE OF THE SECRETARY

| | |
|-----------------|--------------------------------------|
| G. Yorke Slader | Secretary |
| I. Melzer | A/Assistant Secretary ⁽¹⁾ |

OIL BRANCH

| | |
|----------------|--------------------------------|
| P.G. Scotchmer | Director |
| B.P. Leakey | Assistant Director, Evaluation |
| R.B. Stevens | Assistant Director, Operations |

PIPELINES BRANCH

| | |
|-------------------|---|
| T.S. Shwed | Director |
| R.E. Jackson, Jr. | A/Assistant Director, Engineering |
| P.A. Carr | A/Assistant Director, Environment and Right-of-Way |
| E.L.M. Gordon | A/Assistant Director, Construction and Operation |

SYSTEMS DEVELOPMENT BRANCH

| | |
|-------------|--|
| D. Emmens | Director |
| K.E. Begley | Assistant Director, Systems and Operations |
| K.S. Song | Assistant Director, Planning and Data Base |

1. Effective 10 January 1983.

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G-I

CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY FOR GAS PIPELINES ISSUED DURING 1982

| APPLICANT | FACILITIES | ESTIMATED COST | HEARD | ISSUED | CERTIFICATE NO. |
|-------------------------------|--|----------------|-------------------------------------|--------------|-----------------|
| TransCanada PipeLines Limited | Approximately 426 km of 914 mm O.D. pipeline from North Bay to Morrisburg, Ontario | \$408,000,000 | 20-23 Oct. 1981 and 16-21 Nov. 1981 | 15 Jan. 1982 | GC-69 |
| TransCanada PipeLines Limited | Approximately 186 km of 1219 mm O.D. looping in Saskatchewan and Manitoba | \$218,000,000 | 16-17 Feb. 1982 | 18 May 1982 | GC-70 |

G-II

ORDERS RELATING TO NEW GAS PIPELINE FACILITIES ISSUED DURING 1982 — CLASS "B" CONSTRUCTION

| APPLICANT | FACILITIES | ESTIMATED COST | ISSUED | ORDER NO. |
|--|--|------------------|---------------|-----------|
| Foothills Pipe Lines (Sask.) Ltd. | Seven 26.7 mm O.D. sales taps, Saskatchewan | No cost reported | 16 July 1982 | XG-6-82 |
| Foothills Pipe Lines (Sask.) Ltd. | The extension of twenty 26.7 mm O.D. pipeline sections, Saskatchewan | No cost reported | 16 July 1982 | XG-7-82 |
| Foothills Pipe Lines (Sask.) Ltd. | The extension of 60.3 mm O.D. pipeline section, Saskatchewan | No cost reported | 16 July 1982 | XG-8-82 |
| Minell Pipeline Ltd. | Automatic odorant station, Saskatchewan | \$11,700 | 11 June 1982 | XG-3-82 |
| Minell Pipeline Ltd. | Sales tap, Manitoba | \$2,300 | 17 June 1982 | XG-4-82 |
| Peace River Transmission Company Limited | Dawson Creek Meter Station, British Columbia | \$24,215 | 24 Nov. 1982 | XG-19-82 |
| TransCanada PipeLines Limited | Sales tap at Lowther, Ontario | \$103,900 | 7 April 1982 | XG-2-82 |
| TransCanada PipeLines Limited | St. Lazare Check Meter Station, Quebec | \$2,837,000 | 8 Sept. 1982 | XG-11-82 |
| TransCanada PipeLines Limited | Delivery point facility at Ramore, Ontario | \$15,000 | 29 Sept. 1982 | XG-14-82 |
| Trans Québec & Maritimes Pipeline Inc. | Approximately 8.6 km lateral to Trois-Rivières West, Quebec | \$2,419,500 | 21 June 1982 | XG-5-82 |
| Trans Québec & Maritimes Pipeline Inc. | Approximately 14.2 km lateral to Joliette, Quebec | \$5,242,400 | 13 Aug. 1982 | XG-9-82 |
| Westcoast Transmission Company Limited | Replacement of 27.4 km of 508 mm O.D. and 610 mm O.D. pipe of the Grizzly pipeline | \$22,032,000 | 26 March 1982 | XG-1-82 |
| Westcoast Transmission Company Limited | Dawson Creek Meter Station, British Columbia | \$31,000 | 13 Aug. 1982 | XG-10-82 |
| Westcoast Transmission Company Limited | Kersley Meter Station, British Columbia | \$76,100 | 15 Sept. 1982 | XG-12-82 |
| Westcoast Transmission Company Limited | Azouzetta Meter Station, British Columbia | \$50,100 | 15 Sept. 1982 | XG-13-82 |
| Westcoast Transmission Company Limited | Petrosul Meter Station, British Columbia | \$37,600 | 20 Oct. 1982 | XG-15-82 |
| Westcoast Transmission Company Limited | Goodlow Meter Station, British Columbia | \$54,700 | 20 Oct. 1982 | XG-16-82 |
| Westcoast Transmission Company Limited | Baldonnel Meter Station, British Columbia | \$70,500 | 20 Oct. 1982 | XG-17-82 |
| Westcoast Transmission Company Limited | South Taylor Meter Station, British Columbia | \$58,000 | 20 Oct. 1982 | XG-18-82 |
| Westcoast Transmission Company Limited | David Minerals Meter Station, British Columbia | \$50,000 | 8 Dec. 1982 | XG-20-82 |

G-II

ORDERS RELATING TO NEW GAS PIPELINE FACILITIES ISSUED DURING 1982 — CLASS "C" CONSTRUCTION

| APPLICANT | FACILITIES | ESTIMATED COST | ISSUED | ORDER NO. |
|--|---|----------------|---------------|-----------|
| Alberta Natural Gas Company Ltd. | Total | \$957,820 | | |
| | Compressor station additions, meter station additions, work equipment, etc. | \$658,000 | 17 Feb. 1982 | XGM-3-82 |
| | Welding shop construction | \$89,500 | 3 Mar. 1982 | XGM-4-82 |
| | Kinsgate meter station additions | \$210,320 | 8 Dec. 1982 | XGM-19-82 |
| ICG Transmission Holdings Ltd. | Total | \$27,740 | | |
| | Pipe replacement, pressure alarm system and station site upgrading | \$25,740 | 30 Apr. 1982 | XGM-9-82 |
| | Relief valve relocation and vent pipe extension | \$2,000 | 8 Sept. 1982 | XGM-13-82 |
| TransCanada PipeLines Limited | Total | \$41,167,000 | | |
| | Pipe repair, tie over valve, corrosion protection replacement, etc. | \$1,000,000 | 10 Feb. 1982 | XGM-2-82 |
| | Pipe replacements and miscellaneous station modifications | \$11,382,000 | 3 Mar. 1982 | XGM-5-82 |
| | 3 MW unit, power turbine starter, pipe replacements, etc. | \$1,000,000 | 17 Mar. 1982 | XGM-6-82 |
| | Remedial measures for pipe protection, spare gas generators and power turbines | \$14,137,000 | 15 Apr. 1982 | XGM-8-82 |
| | Pipe replacements, compressor station changes and meter station changes | \$13,647,000 | 19 May 1982 | XGM-10-82 |
| Trans Québec & Maritimes Pipeline Inc. | Saint Lazare valve assembly | \$70,497 | 8 Dec. 1982 | XGM-18-82 |
| Westcoast Transmission Company Limited | Total | \$42,682,700 | | |
| | Line break repair, etc. | \$827,200 | 6 Jan. 1982 | XGM-1-82 |
| | Contingencies | \$1,000,000 | 7 Apr. 1982 | XGM-7-82 |
| | Road crossings, hot taps, heavy work equipment, etc. | \$2,041,000 | 19 May 1982 | XGM-11-82 |
| | Compressor station upgrading, processing and sulphur plant upgrading, meter station improvements, pipe replacements, transportation equipment, etc. | \$24,091,000 | 16 July 1982 | XGM-12-82 |
| | Improvements to pipeline, processing and sulphur plants and compressor and meter stations | \$7,176,200 | 29 Sept. 1982 | XGM-14-82 |

G-II (Cont'd)

ORDERS RELATING TO NEW GAS PIPELINE FACILITIES ISSUED DURING 1982 — CLASS "C" CONSTRUCTION

| APPLICANT | FACILITIES | ESTIMATED COST | ISSUED | ORDER NO. |
|-----------|--|----------------|--------------|-----------|
| | Line break operators at Stewart Creek | \$66,000 | 20 Oct. 1982 | XGM-15-82 |
| | Pipeline improvements, processing and sulphur plant improvements, compressor and meter station additions, etc. | \$4,579,300 | 3 Nov. 1982 | XMG-16-82 |
| | Pipeline improvements, processing and sulphur plant improvements, compressor and meter station additions, etc. | \$2,902,000 | 1 Dec. 1982 | XGM-17-82 |

G-III

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1982

| TYPE OF ORDER | LICENSEE | ORDER NUMBER | POINT OF EXPORT | TERM OF ORDER | | MAXIMUM |
|----------------------------|---------------------------|--------------|-----------------|---------------|----------|---|
| | | | | FROM | TO | |
| New Ethylene Export Orders | 1. Esso Chemical Canada | EYL-1-82 | Fort Erie, Ont. | 82-04-01 | 83-03-31 | 3 500 000 kilograms |
| | 2. Petrosar Limited | EYL-2-82 | Sarnia, Ont. | 82-11-09 | 83-03-31 | 9 071 850 kilograms |
| New Propane Export Order | 1. Dome Petroleum Limited | EPR-927-82 | Sarnia, Ont. | 82-11-23 | 83-02-28 | 23 810 m ³ imported by Dome for reprocessing. |
| New Butanes Export Orders | 1. Texaco Canada Inc. | EBU-916-82 | Gretna, Man. | 82-07-01 | 92-06-30 | No maximum export volume so long as the same butanes are imported within 30 days. |
| | 2. Dome Petroleum Limited | EBU-927-82 | Sarnia, Ont. | 82-09-21 | 82-12-31 | 7 950 m ³ imported by Dome for reprocessing. |

G-III (Cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1982

| TYPE OF ORDER | LICENSEE | ORDER NUMBER | DATE OF ISSUE | COMMENTS |
|--|--|--------------|---------------|--|
| Orders Amending Existing Natural Gas Export Licences | 1. Canadian-Montana Pipe Line Company | AO-19-GL-5 | 82-07-12 | Amendment establishing Emerson, Manitoba and Niagara Falls, Ontario as additional points of export. |
| | 2. Niagara Gas Transmission Limited | AO-27-GL-6 | 82-05-21 | Amendment establishing that the price to be received for gas exported as peaking service gas, including all transmission costs to the international boundary, shall be the aggregate of (a) the price prescribed in the Natural Gas Prices Regulations, 1981, for gas sold as peaking service gas, and (b) the cost of transportation of the gas on the Niagara Gas Transmission Limited System from Cornwall to the international boundary calculated in accordance with the contract dated March 1, 1982, between Niagara Gas Transmission Limited and St. Lawrence Gas Company Inc. |
| | 3. Canadian-Montana Pipe Line Company | AO-17-GL-17 | 82-01-21 | Amendment establishing Emerson, Manitoba and Niagara Falls, Ontario as additional points of export during the period ending 31 October 1985. Exports through these points are to be on an interruptible basis. |
| | 4. Canadian-Montana Pipe Line Company | AO-18-GL-17 | 82-07-12 | See Item 1. |
| | 5. TransCanada PipeLines Limited | AO-19-GL-19 | 82-02-18 | Amendment which increases the daily volume limitation on exports during the period 82-11-01 to 83-04-15. This amendment also varies condition 5 of the licence dealing with the price to be received for gas exported as peaking service gas. |
| | 6. TransCanada PipeLines Limited | AO-20-GL-19 | 82-04-20 | Amendment, which increase the daily volume limitation on exports as set out in condition 2 of the licence. This amendment also varies condition 5 of the licence dealing with the price to be received for gas exported as peaking service gas. |
| | 7. Canadian-Montana Pipe Line Company | AO-20-GL-25 | 82-07-12 | See Item 1. |
| | 8. Canadian-Montana Pipe Line Company | AO-15-GL-36 | 82-01-21 | See Item 3. |
| | 9. Canadian-Montana Pipe Line Company | AO-16-GL-36 | 82-08-09 | Amendment, which deletes Emerson, Manitoba and Niagara Falls, Ontario as authorized points of export. |
| | 10. Westcoast Transmission Company Limited | AO-25-GL-41 | 82-04-20 | Amendment, which increases the daily volume limitation on exports and adds Monchy, Saskatchewan as a point of export. |

G-III (Cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1982

| TYPE OF ORDER | LICENSEE | ORDER NUMBER | DATE OF ISSUE | COMMENTS |
|--|---|-----------------|---------------|---|
| Orders Amending Existing Natural Gas Export Licences | 11. TransCanada Pipelines Limited | AO-20-GL-43 | 81-11-26 | Amendment, which consolidates the fuel gas components of export licences GL-20 and GL-37 which is used in the transportation of gas to eastern Canada by Great Lakes Gas Transmission Company, under a single export licence GL-43. |
| | 12. Canadian-Montana Pipe Line Company | AO-3-GL-52 | 82-01-21 | See Item 3. |
| | 13. Canadian-Montana Pipe Line Company | AO-4-GL-52 | 82-08-09 | See Item 9. |
| | 14. Canadian-Montana Pipe Line Company | AO-3-GL-53 | 82-07-12 | See Item 1. |
| | 15. Columbia Gas Development of Canada Ltd. | AO-4-GL-54 | 82-04-20 | Amendment establishing Monchy, Saskatchewan as an additional export point during the period 82-11-01 to 87-10-31. |
| | 16. Sulpetro Limited | AO-6-GL-57 | 82-07-29 | Amendment, which provides for a de minimus increase in the daily, annual and term quantities of gas that may be exported necessitated by a discrepancy between the conversion of the Imperial Units applied for in Sulpetro's 13 June 1978 application and the SI units authorized under the licence. |
| | 17. Consolidated Natural Gas Limited | AO-5-GL-61 | 82-07-29 | Amendment, which increases the daily volume limitation on exports at Emerson, Manitoba and Monchy, Saskatchewan during the period 82-11-01 to 83-10-31. |
| Orders Amending Existing Ethane Export Licences | 1. Dome Petroleum Limited | AO-5-GL-47 | 81-12-23 | Amendment establishing that the price to be received for the ethane exported not be less than the price determined pursuant to the agreement dated 73-01-08 between Dome Petroleum Limited and Columbia LNG Corporation as amended by an agreement dated 81-11-19. |
| | 2. Dome Petroleum Limited | AO-1-GL-51 | 81-12-23 | See Item 1. |
| Order Amending Existing Ethylene Export Licence | 1. Esso Chemical Canada | AO-1-EYL-1-82 | 82-04-20 | Amendment establishing that the price to be received for the ethylene exported not be less than the U.S. Gulf coast price for ethylene plus 4.4 U.S. cents per kilogram, f.o.b. Sarnia Ontario, less a reseller's discount of 5%, converted to Canadian funds. |
| Order Amending Existing Propane Export Licence | 1. Dome Petroleum Limited | AO-5-GL-46 | 82-06-03 | Amendment, which increases the volume of imported propane which may be re-exported during the period 82-04-01 to 84-03-31. |
| Order Amending Existing Propane Export Order | 1. NGL Supply Limited | AO-2-EPR-926-81 | 82-02-22 | Amendment, which extends the duration of the order to 82-03-31 and adds Stanstead, Quebec as an export point. |

G-IV

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1982

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM | | |
|---|-----------------------------|---|--|--|--|--|--|
| | | | FROM | TO | DAILY 10 ³ m ³ | ANNUAL 10 ⁶ m ³ | TERM 10 ⁶ m ³ |
| NATURAL GAS | | | | | | | |
| 1. Alberta & Southern Gas Co. Ltd. | GL-3 (AO-16) | Kingsgate, B.C. | 61-10-31 86-10-31 | 86-10-30 87-10-31 | 12 995.4 3 248.9 | 4 341.8 1 085.5 | 109 467.8 |
| 2. Westcoast Transmission Company Limited | GL-4 (AO-17) | Kingsgate, B.C. | 61-12-10 81-12-10 82-11-01 84-11-01 85-11-01 86-11-01 | 81-12-09 82-10-31 84-10-31 85-10-31 86-10-31 87-10-31 | 4 305.8 4 305.8 4 305.8 3 229.4 2 152.9 1 076.5 | 1 444.7 1 300.0 1 444.7 1 083.5 722.4 361.2 | 35 250.9 |
| 3. Canadian-Montana Pipe Line Company | GL-5 (AO-19) | Cardston, Alta. Emerson, Man. & Niagara Falls, Ont. Aden, Alta. | 61-10-31 ^(g) 86-10-31 76-05-11 | 86-10-30 87-10-31 79-12-31 | 1 019.8 255.0 (a) | 310.2 77.6 (a) | 7 832.3 |
| 4. Niagara Gas Transmission Limited | GL-6 (AO-27) | Cornwall, Ont. | 62-09-07 70-12-23 76-11-01 | 87-06-30 71-12-31 77-10-31 | 849.8 849.8 849.8 | 184.1 189.8 170.0 | 3 433.0 |
| 5. Alberta & Southern Gas Co. Ltd. | GL-16 (AO-13) | Kingsgate, B.C. | 66-11-01 67-11-01 | 67-10-31 89-10-31 | 3 204.6 6 409.2 | 1 059.9 2 119.8 | 45 721.1 |
| 6. Canadian-Montana Pipe Line Company | GL-17 (AO-18) | Cardston, Alta. Emerson, Man. & Niagara Falls, Ont. Aden, Alta. | 66-11-01 67-11-01 ^(g) 76-05-11 | 67-10-31 89-10-31 79-12-31 | 339.9 679.9 (a) | 103.4 206.8 (a) | |
| 7. TransCanada PipeLines Limited | GL-18 (AO-26) | Emerson, Man. & Niagara Falls, Ont. ^(d) | 65-11-01 66-11-01 | 68-10-31 89-10-31 | 708.2 4 277.5 ^(c) | 226.6 ^(b) 1 481.5 | 33 993.4 |
| 8. TransCanada PipeLines Limited | GL-19 (AO-20) | Philipsburg, Qué. | 65-11-01 82-11-01 83-11-01 84-11-01 85-11-01 86-11-01 | 82-10-31 83-10-31 84-10-31 85-10-31 86-10-31 89-10-31 | 600.6 634.5 657.2 679.9 702.5 725.2 | 184.1 184.1 184.1 184.1 184.1 184.1 | 3 059.4 |
| 9. TransCanada PipeLines Limited | GL-20 (AO-28) | Emerson, Man. | 67-11-01 | 91-10-31 | 2 662.8 ^(c) | 909.3 | 21 670.8 |
| 10. TransCanada PipeLines Limited | GL-21 (AO-7) ^(e) | Emerson, Man. | 68-11-05 | 91-10-31 | N/S | 7 019.1 | 169 967.0 |
| 11. Alberta & Southern Gas Co. Ltd. | GL-24 (AO-15) | Kingsgate, B.C. | 68-11-01 69-11-01 91-11-01 | 69-10-31 91-10-31 93-10-31 | 3 427.7 6 685.4 3 835.6 | 1 102.0 2 206.7 1 263.4 | 52 177.0 |
| 12. Canadian-Montana Pipe Line Company | GL-25 (AO-20) | Cardston, Alta. Emerson, Man. & Niagara Falls, Ont. Aden, Alta. | 68-11-01 69-11-01 ^(g) 91-11-01 73-03-27 ^(f) 74-05-14 75-05-14 | 69-10-31 91-10-31 93-10-31 74-05-14 75-05-14 76-05-14 | 339.9 679.9 390.9 2 817.5 2 817.5 2 817.5 | 103.4 206.8 119.0 563.5 563.5 283.3 | |

G-IV (Cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1982

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM | | |
|--|-----------------------------|------------------------------------|----------------------------------|----------------------------------|---|--|--|
| | | | FROM | TO | DAILY 10 ³ m ³ | ANNUAL 10 ⁶ m ³ | TERM 10 ⁶ m ³ |
| NATURAL GAS | | | | | | | |
| 13. ICG Transmission Holdings Limited | GL-28 (AO-15) | Sprague, Man. | 76-05-14 76-05-11 | 77-05-14 79-12-31 | 1 408.7 (a) | 141.6 (a) | 4 890.8 |
| 14. ICG Transmission Holdings Limited | GL-29 (AO-16) | Fort Frances, Ont. | 70-11-01 | 95-10-31 | 80.3 | 9.5 | 229.0 |
| 15. ICG Transmission Holdings Limited | GL-30 (AO-3) ^(h) | Sprague, Man. | 70-11-01 | 95-10-31 | 1 321.8 | 344.0 | 8 498.1 |
| 16. Alberta and Southern Gas Co. Ltd. | GL-35 (AO-13) | Kingsgate, B.C. | 70-11-01 85-11-01 86-11-01 | 85-10-31 86-10-31 87-10-31 | 5 807.2 2 903.6 1 451.8 | 1 912.1 956.1 478.1 | 30 116.1 |
| 17. Canadian-Montana Pipe Line Company | GL-36 (AO-16) | Cardston, Alta. | 70-11-01 85-11-01 86-11-01 | 85-10-31 86-10-31 87-10-31 | 339.9 170.0 85.0 | 103.4 51.7 25.9 | 1 628.5 |
| | | Aden, Alta. | 76-05-11 | 79-12-31 | (a) | (a) | |
| | | Emerson Man. & Niagara Falls, Ont. | 82-03-04 | 82-10-31 | (g) | (g) | |
| 18. TransCanada PipeLines Limited | GL-37 (AO-21) | Emerson, Man. | 70-11-01 | 90-10-31 | 5 546.6 ^(c) | 2 030.1 | 40 601.0 |
| 19. TransCanada PipeLines Limited | GL-38 (AO-13) | Emerson, Man. | 70-11-01 | 90-10-31 | 1 416.4 | 518.4 | 10 368.0 |
| 20. TransCanada PipeLines Limited | GL-39 (AO-13) | Emerson, Man. | 70-11-01 | 90-10-31 | 204.0 | 74.6 | 1 493.0 |
| 21. Westcoast Transmission Company Limited | GL-41 (AO-25) | Huntingdon, B.C. ⁽ⁱ⁾ | 71-11-01 72-11-01 80-11-01 | 72-10-31 80-10-31 89-10-31 | 20 773.9 22 922.9 24 622.6 | 7 223.1 (j) (j) | 142 853.3 |
| | | Monchy, Sask. | 82-11-01 | 89-10-31 | 1 274.8 | 419.5 | |
| 22. TransCanada PipeLines Limited | GL-42 (AO-3) ^(e) | Emerson, Man. | 71-04-15 71-11-01 | 71-10-31 94-10-31 | N/S N/S | 232.8 2 612.3 | 60 316.5 |
| 23. TransCanada PipeLines Limited | GL-43 (AO-20) | Emerson, Man. | 71-11-01 | 91-10-31 | N/S | 481.6 | 9 631.5 |
| 24. Consolidated Natural Gas Limited | GL-44 ^(k) | Emerson, Man. | 72-03-15 | 92-10-31 | 4 249.2 | 1 274.8 | 18 951.3 |
| 25. Tenneco LNG Inc. | GL-49 | St. Stephen, N.B. | (l) | (m) | 32 295.0 | 11 820.0 | (n) |

G-IV (Cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1982

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM | | |
|---|-------------------------|---|--|--|---|--|--|
| | | | FROM | TO | DAILY 10 ³ m ³ | ANNUAL 10 ⁶ m ³ | TERM 10 ⁶ m ³ |
| NATURAL GAS | | | | | | | |
| 26. Canadian-Montana Pipe Line Company | GL-52 (AO-4) | Aden, Alta. | 80-01-01 85-01-01 86-01-01 87-01-01 82-03-04 | 84-12-31 85-12-31 86-12-31 87-12-31 82-10-31 | 1 416.4 1 062.3 708.2 354.1 (g) | 283.3 212.5 141.6 70.8 (g) | 1 841.4 |
| 27. Canadian-Montana Pipe Line Company | GL-53 (AO-3) | Cardston, Alta. Emerson, Man. & Niagara Falls, Ont. | 86-07-01(g) 86-11-01 | 86-10-31 87-10-31 | 340.0 170.0 | | 34.5 51(g) 86.2 |
| 28. Columbia Gas Development of Canada Ltd. | GL-54 (AO-4) | Huntingdon, B.C. | 80-01-01 81-11-01 82-01-01 85-01-01 86-01-01 87-01-01 | 80-10-31 81-12-31 84-12-31 85-12-31 86-12-31 87-12-31 | 1 110.4 1 450.0 1 450.0 832.8 555.2 277.6 | 368.3 70.8 423.5 276.2 184.2 92.1 | 2 394.0 |
| | | Maximum permitted at Monchy, Sask. as part of combined Huntingdon/Monchy volumes. | 82-11-02 | 87-10-31 | 283.3 | 92.1 | |
| 29. Niagara Gas Transmission Limited | GL-55 (AO-2) | Cornwall, Ont. | 80-01-01 80-11-01 84-11-01 85-11-01 86-11-01 | 80-10-31 84-10-31 85-10-31 86-10-31 87-10-31 | 350.0 350.0 262.5 600.0 300.0 | 89.1 89.1 66.8 136.8 68.4 | 717.5 |
| 30. ProGas Limited | GL-56 (AO-3) | Emerson, Man. and Monchy, Sask. (combined maximum) | 80-11-01 84-11-01 85-11-01 86-11-01 | 84-10-31 85-10-31 86-10-31 87-10-31 | 9 440.9 7 088.7 4 720.4 2 360.2 | 3 100.0 2 325.0 1 550.0 775.0 | 17 050.0 |
| | | Maximum permitted at Monchy, Sask. as part of combined Emerson/Monchy volumes. | 81-11-01 82-11-01 85-11-01 86-11-01 | 82-10-31 85-10-31 86-10-31 87-10-31 | 2 613.7 4 849.4 4 249.2 2 124.6 | 954.0 1 770.0 1 550.0 775.0 | (7 648.5)(g) |
| 31. Sulpetro Limited | GL-57 (AO-6) | Niagara Falls, Ont. | 80-01-01 80-11-01 82-11-01 82-11-04 | 80-10-31 82-10-31 82-11-03 83-10-31 | 2 089.1(r) 2 089.1(r) 2 089.1 2 125.0 | 612.8 762.5 606.8(r) 606.8(r) | 1 838.4 |
| 32. Pan-Alberta Gas Ltd. | GL-58 (AO-3) | Monchy, Sask. | 81-11-01 84-11-01 85-11-01 86-11-01 87-11-01 | 84-10-31 85-10-31 86-10-31 87-10-31 88-10-31 | 24 928.5 18 696.4 12 464.3 6 232.1 (13 605.1)(s) 24 928.5(s) | 8 294.4 6 220.8 4 147.2 2 073.6 (s) (s) | 37 324.8 |

G-IV (Cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1982

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM | | |
|--|-------------------------|--|--|--|--|--|----------------------------|
| | | | FROM | TO | DAILY 10^3 m^3 | ANNUAL 10^6 m^3 | TERM 10^6 m^3 |
| NATURAL GAS | | | | | | | |
| 33. Pan-Alberta Gas Ltd. | GL-59 (AO-3) | Kingsgate, B.C. | 80-11-01 84-11-01 85-11-01 86-11-01 87-11-01 | 84-10-31 85-10-31 86-10-31 87-10-31 88-10-31 | 7 478.6 5 608.9 3 739.3 1 869.0 7 478.6 | 2 488.3 1 866.2 1 244.2 622.1 (t) | 13 685.7 |
| 34. TransCanada PipeLines Limited | GL-60 (AO-2) | Emerson, Man. | 80-01-01 80-11-01 84-11-01 85-11-01 | 80-10-31 84-10-31 85-10-31 85-12-14 | 6 317.1 ^(u) 6 317.1 ^(u) 4 737.8 3 158.6 | 800.0 2 096.3 1 572.2 139.0 | 10 896.4 |
| 35. Consolidated Natural Gas Limited | GL-61 (AO-5) | Emerson, Man. and Monchy, Sask. (combined maximum) | 80-11-01 84-11-01 85-11-01 86-11-01 | 84-10-31 85-10-31 86-10-31 87-10-31 | 5 665.6 ^(o) 4 249.2 2 832.8 1 416.4 | 2 067.9 1 551.0 1 034.0 517.0 | 11 373.6 |
| | | Maximum permitted at Monchy, Sask. as part of combined Emerson/Monchy volumes. | 81-11-01 85-11-01 86-11-01 | 85-10-31 86-10-31 87-10-31 | 3 232.9 ^(o) 2 832.8 1 416.4 | 1 180.0 1 034.0 517.0 | (5 099.0) ^(v) |
| 36. Canadian-Montana Pipe Line Company | GO-3-79 (AO-2) | Section 1, Township 1, Range 20 West of the Meridian, Alta. | 79-05-01 | 93-12-31 | 30.0 | 10.3 | 105.0 |
| 37. Pan-Alberta Gas Ltd. | GL-62 (AO-1) | Monchy, Sask. | 84-11-01 85-11-01 86-11-01 | 85-10-31 86-10-31 87-10-31 | 6 232.1 12 464.2 5 091.3 | 2 073.6 4 147.2 1 694.0 | 7 914.8 |
| 38. Pan-Alberta Gas Ltd. | GL-63 (AO-1) | Kingsgate, B.C. | 80-11-01 83-11-01 84-11-01 85-11-01 86-11-01 | 83-10-31 84-10-31 85-10-31 86-10-31 87-10-31 | 931.5 ^(w) 1 869.7 3 739.4 5 609.0 7 478.6 | 340.0 ^(w) 622.1 1 244.2 1 866.2 2 488.3 | 6 220.8 ^(x) |
| 39. Union Gas Limited | GL-64 (AO-1) | Windsor, Ont. | 80-11-01 | 85-10-31 | 1 100.0 | 284.0 | 1 420.0 |

- (a) Notwithstanding the named point of export at Cardston, Alta., gas was allowed to be exported at Aden, Alta., provided the combined volume exported at Aden under Licences GL-5, GL-17, GL-25 and GL-36 did not exceed $2 817.5 \times 10^3 \text{ m}^3/\text{day}$ or $563.5 \times 10^6 \text{ m}^3/\text{year}$ during the period 76-05-11 to 79-12-31.
- (b) Exports of interruptible gas were authorized during the period 65-11-01 to 68-10-31 to a maximum total volume of $226.6 \times 10^6 \text{ m}^3$.
- (c) During the period 80-11-01 to 82-10-31, the Licensee is authorized to export additional volumes in excess of the daily maximum under Licences GL-18, GL-20 and GL-37, such additional volumes being subject to interruption for Canadian domestic requirements. The annual combined quantity of these interruptible volumes under the three licences should not exceed $1 983.0 \times 10^6 \text{ m}^3$ during the period 80-11-01 to 81-10-31, and $1 400.0 \times 10^6 \text{ m}^3$ during the period 81-11-01 to 82-10-31.
- (d) Notwithstanding Emerson, Manitoba as the point of export, the Licensee has been authorized to export volumes of gas on an interruptible basis at Niagara Falls, Ontario during the periods 79-10-18 to 79-12-16; and 80-06-05 to 82-10-31.
- (e) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario to serve Eastern Canadian markets.
- (f) Exports of gas were authorized for Aden, Alta., commencing on the day when the term quantity of gas authorized by Licence GL-8 was exported (approximately June 1973).
- (g) Emerson, Man. and Niagara Falls, Ont. were added as additional export points to GL-5, GL-17, GL-25 and GL-53 effective 82-11-01 and to GL-36 and GL-52 for the period 82-03-04 to 82-10-31.
- (h) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.
- (i) Notwithstanding the Huntingdon, B.C. export point, the Licensee was authorized to export gas at a place near Kingsgate, B.C. during the period from 73-11-01 to 79-10-31. Effective 82-11-01 volumes authorized through Monchy, Sask. are additional to the daily and annual volumes authorized to be exported at Huntingdon, B.C.

G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1982

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM VOLUMES (m ³) |
|---|-----------------------------|--|--|--|--|
| | | | FROM | TO | |
| PROPANE | | | | | |
| 1. Dome Petroleum Limited | GL-31 (AO-7) | Any point on the international boundary between Canada and the United States | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 | 716 983 688 571 656 190 620 476 133 254 133 254 133 254 133 254 143 809 193 016 196 984 169 047 165 873 165 079 162 098 103 968 |
| 2. Amoco Canada Petroleum Company Limited | GL-32 (AO-5) | Any point on the international boundary between Canada and the United States | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 | 92 698 92 698 |
| 3. PanCanadian Gas Products Limited | GL-34 (AO-6) | Any point on the international boundary between Canada and the United States | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 | 63 730 63 730 63 730 63 730 63 730 63 730 63 730 53 175 3 968 |
| 4. Dome Petroleum Limited | GL-46 (AO-5) ^(a) | Any point on the international boundary between Canada and the United States | 78-04-01 79-04-01 80-04-01 | 79-03-31 80-03-31 81-03-31 | 619 047 601 587 547 619 |

- (i) For the period 72-11-01 to 89-10-31, the Licensee is authorized to export an average annual quantity of gas of $7\ 970.3 \times 10^6 \text{ m}^3$ or a maximum of $8\ 389.8 \times 10^6 \text{ m}^3$ in any consecutive twelve-month period ending on the 31st day of October.
- (k) The quantity of gas exported under this licence shall be equal to the quantities of gas which the licensee imports pursuant to Licence No. GLI-5.
- (l) From the date of Initial Delivery.
- (m) Twenty years and six months after the date of the First Regular Delivery or a total term from Initial Delivery not exceeding 25 years.
- (n) The total gas or equivalent quantity expressed in cubic metres of the liquefied natural gas imported pursuant to Licence GLI-7.

G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1982

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM VOLUMES (m ³) |
|---|-------------------------|--|--|--|--|
| | | | FROM | TO | |
| PROPANE | | | | | |
| 5. Dome Petroleum Limited | EPR-917-79(c) | Any place on the international boundary between Canada and the United States | 81-04-01 82-04-01 83-04-01 79-09-06 | 82-03-31 83-03-31 84-03-31 96-01-31 | 468 254 535 000 535 000 Not Specified |
| 6. Amoco Canada Petroleum Company Limited | EPR-918-79(c) | Same as EPR-917-79 | 79-09-06 | 96-01-31 | Not Specified |
| 7. PanCanadian Gas products Limited | EPR-919-79(c) | Same as EPR-917-79 | 79-09-06 | 91-01-31 | Not Specified |
| 8. Imperial Oil Limited | EPR-922-80(b) | Gretna, Man. | 80-09-01 | 90-08-31 | Not Specified |
| 9. Dome Petroleum Limited | EPR-927-82(d) | Sarnia, Ont. | 82-11-23 | 83-02-28 | 23 810 |

- (o) For the period 82-11-04 to 83-10-31 an additional daily volume of $2\ 832.8 \times 10^9 \text{ m}^3/\text{d}$ may be exported at the combined Emerson and Monchy export points, of which a maximum additional daily volume of $2\ 432.7 \times 10^3 \text{ m}^3/\text{d}$ may be exported at the Monchy export point subject to interruption to meet Canadian and other export requirements.
- (p) The quantity of gas that may be exported in any consecutive twelve-month period ending on the 31st day of October under this licence together with the quantity of gas that may be exported under Licence GL-25 shall not exceed $206.8 \times 10^6 \text{ m}^3$.
- (q) For the six years period from 81-11-01 to 87-10-31, the Licensee is authorized to export at Monchy, Saskatchewan a maximum volume of gas of $7\ 648.5 \times 10^6 \text{ m}^3$.
- (r) The Licensee may exceed the daily limitation of $2\ 089.1 \times 10^3 \text{ m}^3/\text{d}$ during the period 80-11-01 to 82-11-03, and $2\ 125.0 \times 10^3 \text{ m}^3/\text{d}$ during the period 82-11-04 to 83-10-31 subject to interruption for TransCanada's domestic and export service. The quantity exported during the period 82-11-01 to 83-10-31 may not exceed the lesser of $612.8 \times 10^6 \text{ m}^3$ or the difference between the term volume and the total quantity exported to 82-10-31.
- (s) "Additional" volumes, i.e. make-up gas equal to the difference between the authorized volume minus the actual volume exported over the 1981/82 licence period, may be exported during 86-11-01/87-10-31 to a maximum of $13\ 605.1 \times 10^3 \text{ m}^3/\text{d}$ and $4\ 526.8 \times 10^6 \text{ m}^3/\text{a}$. Any "additional" volumes still left unexported in the period 1981/82 less the 1986/87 export of "additional" volumes may be exported during the "extended" period 87-11-01/88-10-31. "Additional" volumes authorized during 86-11-01/88-10-31 are subject to reduction depending on Canadian deliverability requirements.
- (t) For the extended period 87-11-01/88-10-31, the Licensee may export the difference between the authorized quantity during 80-11-01/81-10-31 and the actual quantity exported in such period, subject to reduction depending on Canadian deliverability requirements.
- (u) During the period ending 81-05-14, the total quantity of gas that may be exported in any one day shall not exceed the difference between $6\ 317.1 \times 10^3 \text{ m}^3$ and the quantity of gas exported under Licence GL-1 on that day.
- (v) For the six year period from 81-11-01 to 87-10-31, the Licensee is authorized to export at Monchy, Saskatchewan a maximum volume of $5\ 099.0 \times 10^6 \text{ m}^3$.
- (w) The total volume of gas exported during the period 80-11-01 to 83-10-31 shall reduce by the same amount the total term volume of gas authorized to be exported during the balance of the term of this licence (i.e. 83-11-01/87-10-31).
- (x) For the period 85-11-01/87-10-31, $1\ 588.0 \times 10^6 \text{ m}^3$ are conditional volumes and could be reduced should deliverability be insufficient to meet Canadian requirements and authorized exports.

N/S Not Specified

G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1982

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM VOLUMES (m ³) |
|---|----------------------------------|--|--|--|---|
| | | | FROM | TO | |
| BUTANES | | | | | |
| 1. Dome Petroleum Limited | EBU-1-74 (AO-3) ^(e) | Any place on the international boundary between Canada and the United States | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 792 461 773 405 689 235 587 597 528 837 433 551 |
| 2. Dome Petroleum Limited | EBU-132-74 (AO-1) ^(b) | Gretna, Man. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 95-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 95-12-31 | 603 129 580 324 556 375 532 601 502 284 452 037 437 093 402 186 352 812 341 711 315 460 299 627 290 273 272 057 265 117 245 012 239 724 |
| 3. Amoco Canada Petroleum Company Limited | EBU-133-74 (AO-1) ^(b) | Gretna, Man. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 95-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 95-12-31 | 618 088 575 893 540 176 488 674 423 848 374 315 359 244 308 345 260 131 239 549 205 008 179 455 163 527 135 973 122 506 95 286 91 062 |

G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1982

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM VOLUMES (m ³) |
|-------------------------------------|----------------------------------|-----------------|--|--|--|
| | | | FROM | TO | |
| BUTANES | | | | | |
| 4. PanCanadian Gas Products Limited | EBU-134-74 (AO-1) ^(b) | Gretna, Man. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 | 213 822 213 822 213 822 213 822 213 822 240 550 240 550 240 550 240 550 240 550 240 550 240 550 |
| 5. Imperial Oil Limited | EBU-911-80 ^(b) | Gretna, Man. | 80-09-01 | 90-08-31 | Not Specified |
| 6. Texaco Canada Inc. | EBU-916-82 ^(b) | Gretna, Man. | 82-07-01 | 92-06-30 | Not Specified |
| 7. Dome Petroleum Limited | EBU-927-82 ^(f) | Sarnia, Ont. | 82-09-21 | 82-12-31 | 7 950 |

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM VOLUMES (m ³) |
|---------------------------|-------------------------------|--|--|--|--|
| | | | FROM | TO | |
| ETHANE | | | | | |
| 1. Dome Petroleum Limited | GL-45 (AO-5) ^(g) | Any point on the international boundary between Canada and the United States | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 530 325 537 245 547 703 565 080 571 399 549 883 |
| 2. Dome Petroleum Limited | GL-47 (AO-5) | Elmore, Sask. and Windsor, Ont. | 78-08-15 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 | 78-12-31 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 | 835 298 2 211 664 2 195 866 2 053 688 1 563 962 1 405 986 1 184 820 458 130 |
| 3. Dome Petroleum Limited | GO-1-76 (AO-1) ^(h) | Elmore, Sask. | 78-01-01 | 85-12-31 | 3 949 m ³ /a |
| 4. Dome Petroleum Limited | GL-51 (AO-1) | Elmore, Sask. and Windsor, Ont. | 79-06-21 | 93-12-31 | 19 069 000 |

G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1982

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM VOLUMES (kg) |
|-----------------------------------|--------------------------------|--|--------------------------|----------|----------------------|
| | | | FROM | TO | |
| ETHYLENE | | | | | |
| 1. Dow Chemical of Canada Limited | EYL-1-76 (AO-2) | Elmore, Sask. Sarnia and Windsor Ont. | 80-01-01 | 89-12-31 | 158 757 340 kg/a |
| 2. Dow Chemical of Canada Limited | EYL-2-76 (AO-1) ⁽ⁱ⁾ | Elmore, Sask. | 78-01-01 | 97-12-31 | 68 038 860 kg/a |
| 3. Dow Chemical of Canada Limited | EYL-1-81 | Sarnia, Ont. | 82-01-01 | 82-12-31 | 9 000 000 kg |
| 4. Esso Chemical Canada | EYL-1-82 (AO-1) | Fort Erie, Ont. | 82-04-01 | 83-03-31 | 3 500 000 kg |
| 5. Petrosar Limited | EYL-2-82 | Sarnia, Ont. | 82-11-09 | 83-03-31 | 9 071 850 kg |

- (a) This is an import-export licence whereby propane imported at Sarnia or Windsor may be exported at any place on the international boundary between Canada and the United States.
- (b) This order authorizes an export at Gretna, Manitoba for subsequent import at Sarnia, Ontario.
- (c) This order authorizes an export of propane at any point on the international boundary between Canada and the United States and subsequent import of the same propane within 30 days after the day of export.
- (d) This order authorizes an export at Sarnia, Ontario of propane that was previously imported by Dome for reprocessing at Dome's Sarnia fractionation plant.
- (e) This order authorizes an import at Sarnia or Windsor, Ontario for subsequent export at any place on the international boundary between Canada and the United States.
- (f) This order authorizes an export at Sarnia, Ontario of butanes that were previously imported by Dome for reprocessing at Dome's Sarnia fractionation plant.
- (g) This licence authorizes an export at any point on the international boundary between Canada and the United States. The quantity of ethane exported under the authority of this licence shall be equal to the quantities of ethane which the licensee imports near Sarnia and Windsor, Ontario.
- (h) This order authorizes an export of ethane at Elmore, Saskatchewan for subsequent import at Windsor, Ontario.
- (i) This order authorizes an export of ethylene at Elmore, Saskatchewan for subsequent import at Windsor, Ontario.

G-V

EXPORTS OF NATURAL GAS

| Exporter and Licence/Order ^(a) | 10 ⁶ m ³ | | | | | | |
|--|---------------------------------------|---------|---------|---------|---------------------------------------|--------------------------|---|
| | Cumulative ^(b) to 79-12-31 | 1980 | 1981 | 1982 | Cumulative ^(b) to 82-12-31 | Total Authorized Exports | Remaining ^(c) Under Licences |
| 1. TransCanada PipeLines Limited GL-1 | 38 866.1 | 927.7 | 148.5 | — | 39 942.3 | 39 942.3 | — |
| 2. Alberta & Southern Gas Co. Ltd. GL-3 | 78 458.6 | 3 998.2 | 3 514.5 | 3 729.2 | 89 700.5 | 109 467.8 | 19 767.3 |
| 3. Westcoast Transmission Company Limited GL-4 | 23 362.0 | 1 051.7 | 928.8 | 738.6 | 26 081.1 | 35 250.9 | 9 169.8 |
| 4. Canadian-Montana Pipe Line Company GL-5 | 5 715.0 | 207.9 | 255.0 | 206.5 | 6 384.5 | 7 832.3 | 1 447.8 |
| 5. Niagara Gas Transmission Limited GL-6 | 2 321.4 | 151.2 | 108.3 | 68.4 | 2 649.3 | 3 433.0 | 783.7 |
| 6. Alberta & Southern Gas Co. Ltd. GL-16 | 26 209.7 | 1 666.7 | 1 367.6 | 317.8 | 29 561.8 | 45 721.1 | 16 159.3 |
| 7. Canadian-Montana Pipe Line Company GL-17 | 2 691.0 | 139.8 | 124.3 | 79.5 | 3 034.5 | 4 652.8 | 1 618.3 |
| 8. TransCanada PipeLines Limited GL-18 | 15 945.0 | 1 929.4 | 1 092.5 | 236.6 | 19 203.6 | 33 993.4 | 14 789.8 |
| 9. TransCanada PipeLines Limited GL-19 | 1 233.7 | 119.6 | 130.0 | 128.0 | 1 611.3 | 3 059.4 | 1 448.1 |
| 10. TransCanada PipeLines Limited GL-20 | 9 836.9 | 889.6 | 860.1 | 790.7 | 12 377.4 | 21 670.8 | 9 293.4 |
| 11. TransCanada PipeLines Limited GL-21 | 66 426.6 | 5 314.5 | 5 882.8 | 5 191.1 | 82 815.0 | 169 967.0 | 87 152.0 |
| 12. Alberta & Southern Gas Co. Ltd. GL-24 | 22 896.3 | 1 699.3 | 1 352.4 | 1 281.4 | 27 229.4 | 52 177.0 | 24 947.6 |
| 13. Canadian-Montana Pipe Line Company GL-25 | 3 487.4 | 21.0 | 5.2 | 2.7 | 3 516.3 | 4 890.8 | 1 374.5 |
| 14. ICG Transmission Holdings Limited GL-28 | 72.4 | 8.9 | 7.9 | 9.0 | 98.2 | 229.0 | 130.8 |
| 15. ICG Transmission Holdings Limited GL-29 | 1 811.5 | 160.6 | 149.7 | 135.1 | 2 256.9 | 5 462.2 | 3 205.3 |
| 16. ICG Transmission Holdings Limited GL-30 | 2 657.0 | 278.2 | 252.2 | 233.8 | 3 421.3 | 8 498.1 | 5 076.8 |

G-V (cont'd)

EXPORTS OF NATURAL GAS

| Exporter and Licence/Order ^(a) | 10 ⁶ m ³ | | | | | | |
|---|---------------------------------------|---------|---------|---------|---------------------------------------|--------------------------|---|
| | Cumulative ^(b) to 79-12-31 | 1980 | 1981 | 1982 | Cumulative ^(b) to 82-12-31 | Total Authorized Exports | Remaining ^(c) Under Licences |
| 17. Alberta & Southern Gas Co. Ltd. GL-35 | 17 337.3 | 1 556.8 | 1 166.7 | 1 864.9 | 21 925.7 | 30 116.1 | 8 190.4 |
| 18. Canadian-Montana Pipe Line Company GL-36 | 854.8 | 75.1 | 122.8 | 100.2 | 1 153.0 | 1 628.5 | 475.5 |
| 19. TransCanada PipeLines Limited GL-37 | 18 577.8 | 1 769.8 | 1 760.7 | 1 647.0 | 23 755.4 | 40 601.0 | 16 845.6 |
| 20. TransCanada PipeLines Limited GL-38 | 4 721.8 | 383.0 | 373.0 | 200.0 | 5 677.8 | 10 368.0 | 4 690.2 |
| 21. TransCanada PipeLines Limited GL-39 | 681.3 | 60.6 | 49.5 | 12.0 | 803.4 | 1 493.0 | 689.6 |
| 22. Westcoast Transmission Company Limited GL-41 | 54 290.3 | 4 376.3 | 3 805.1 | 2 608.3 | 65 080.0 | 142 853.3 | 77 773.3 |
| 23. TransCanada PipeLines Limited GL-42 | 18 558.2 | 1 977.9 | 2 189.4 | 1 932.0 | 24 657.5 | 60 316.5 | 35 659.0 |
| 24. TransCanada PipeLines Limited GL-43 | 1 335.9 | — | — | — | 1 335.9 | 9 631.5 | 8 295.6 |
| 25. Consolidated Natural Gas Limited GL-44 | 3 548.9 | 420.7 | 370.2 | 277.9 | 4 617.7 | 18 951.3 | 14 333.6 |
| 26. Canadian-Montana Pipe Line Company GL-52 | — | 189.3 | 83.8 | — | 273.1 | 1 841.4 | 1 568.3 |
| 27. Columbia Gas Development of Canada Ltd. GL-54 | — | — | — | — | — | 2 394.0 | 2 394.0 |
| 28. Niagara Gas Transmission Limited GL-55 | — | 31.9 | 71.4 | 89.1 | 192.4 | 717.5 | 525.1 |
| 29. ProGas Limited GL-56 | — | — | 668.0 | 1 465.6 | 2 133.6 | 17 050.0 | 14 916.4 |
| 30. Sulpetro Limited GL-57 | — | 238.1 | 581.2 | 525.5 | 1 344.8 | 1 838.4 | 493.6 |
| 31. Pan-Alberta Gas Ltd. GL-58 | — | — | — | 1 427.8 | 1 427.8 | 37 324.8 | 35 897.0 |
| 32. Pan-Alberta Gas Ltd. GL-59 | — | — | 280.0 | 1 647.1 | 1 927.1 | 13 685.7 | 11 758.6 |
| 33. TransCanada PipeLines Limited GL-60 | — | 800.0 | 1 574.0 | 1 334.7 | 3 708.7 | 10 896.4 | 7 187.7 |
| 34. Consolidated Natural Gas Limited GL-61 | — | 103.8 | 707.1 | 1 265.4 | 2 076.3 | 11 373.6 | 9 297.3 |

G-V (cont'd)

EXPORTS OF NATURAL GAS

| Exporter and Licence/Order ^(a) | 10 ⁶ m ³ | | | | | | |
|---|---------------------------------------|----------|----------|----------|---------------------------------------|--------------------------|---|
| | Cumulative ^(b) to 79-12-31 | 1980 | 1981 | 1982 | Cumulative ^(b) to 82-12-31 | Total Authorized Exports | Remaining ^(c) Under Licences |
| 35. Pan-Alberta Gas Ltd. GL-63 | — | — | — | — | — | 6 220.8 | 6 220.8 |
| 36. Union Gas Limited GL-64 | — | 6.7 | 296.1 | 284.4 | 587.2 | 1 420.0 | 1 832.8 |
| 37. Western Decalta Petroleum (1977) Limited MO-49-75 | — | — | — | — | — | N/S | — |
| 38. Canadian-Montana Pipe Line Company GO-3-79 | — | — | — | 5.5 | 5.5 | 105.0 | 99.5 |
| 39. Gaz Métropolitain, inc. GO-4-80 | — | — | — | — | — | 13.3 | 11.6 |
| 40. Gas Métropolitain, inc. GO-2-81 | — | — | — | — | — | 0.1 | — |
| Gross Exports ^(d) | 421 896.9 | 30 554.3 | 30 278.8 | 29 835.8 | 512 566.3 | | |
| Deduct Re-Exports of Imports: | | | | | | | |
| Item 25, GL-44 | 3 548.9 | 420.7 | 370.2 | 277.9 | 4 617.7 | | |
| Deduct Exports for Re-Imports: | | | | | | | |
| Item 11, GL-21 | 66 426.6 | 5 314.5 | 5 882.8 | 5 191.1 | 82 815.0 | | |
| Item 16, GL-30 | 2 657.0 | 278.2 | 252.2 | 233.8 | 3 421.3 | | |
| Item 23, GL-42 | 18 558.2 | 1 977.9 | 2 189.4 | 1 932.0 | 24 657.5 | | |
| Net Exports | 330 706.2 | 22 562.9 | 21 583.9 | 22 200.6 | 397 054.8 | | |

(a) For information on the term, point of export, and maximum authorized volumes under each licence and order, please see Appendix G-IV.

(b) Cumulative totals only includes those export licences and orders listed on the table.

(c) It may not be possible to export volumes remaining under these licences due to restrictions on peak day and annual volumes.

(d) The Gross Exports shown are the total for subsisting licences and orders. For volumes exported under expired licences and orders, please see previous Annual Reports of the National Energy Board.

Figures may not total due to rounding.

— — Amount too small to be expressed.

N/S Not stated

N/A Not applicable.

G-VI

NEW LICENCES AND ORDERS TO IMPORT NATURAL GAS IN 1982

No new licences or orders to import natural gas were issued in 1982.

G-VII

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, BUTANES, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1982

| IMPORTER | LICENCE OR ORDER NUMBER | POINT OF IMPORT | TERM OF LICENCE OR ORDER | | MAXIMUM IMPORT VOLUME | | |
|---|----------------------------|----------------------------------|--------------------------|----------------------|---|--|--|
| | | | FROM | TO | DAILY 10 ³ m ³ | ANNUAL 10 ⁹ m ³ | TERM 10 ⁹ m ³ |
| Natural Gas | | | | | | | |
| 1. TransCanada PipeLines Limited | GL-21(AO-7) ^(a) | Sault Ste-Marie and Sarnia, Ont. | 68-11-05 | 91-10-31 | N/S | 7 019.1 | 169 967.0 |
| 2. ICG Transmission Holdings Limited | GL-30(AO-3) ^(b) | Rainy River, Ont. | 70-11-01 | 95-10-31 | 1 321.8 | 344.0 | 8 498.1 |
| 3. TransCanada PipeLines Limited | GL-42(AO-3) ^(a) | Sault Ste-Marie and Sarnia, Ont. | 71-04-15 71-11-01 | 71-10-31 94-10-21 | N/S N/S | 232.8 2 612.3 | 60 316.5 |
| 4. Consolidated Natural Gas Limited | GLI-5(AO-2) | Willow Creek, Sask. | 72-03-15 | 92-10-31 | 4 249.2 | 1 274.8 | 18 951.3 |
| 5. Tenneco LNG Inc. | GLI-7 | Saint John, N.B. | (c) | (d) | N/S | 418.68PJ | 8 373.6PJ |
| Border Utilities 6. Limited | GO-2-66(AO-2) | Coutts, Alta. | 66-06-02 | 85-09-14 | 30.0 | N/S | N/S |
| 7. Canadian Western Natural Gas Company Limited | GO-6-66(AO-3) | Coutts, Alta. | 66-09-22 | 85-09-14 | 30.0 | N/S | N/S |

G-VII (Cont'd)

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, BUTANES, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1982

| IMPORTER | LICENCE OR ORDER NUMBER | POINT OF IMPORT | TERM OF LICENCE OR ORDER | | MAXIMUM IMPORT VOLUME (m ³) |
|---------------------------------|---------------------------------|-------------------------------|--|--|---|
| | | | FROM | TO | |
| Propane | | | | | |
| 1. Dome Petroleum Limited | GL-46(AO-5) ^(e) | Sarnia, Ont. Windsor, Ont. | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 619 047 601 587 547 619 468 254 535 000 535 000 |
| Butanes | | | | | |
| Dome Petroleum 1. Limited | EBU-1-74(AO-3) ^(f) | Sarnia, Ont. Windsor, Ont. | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 792 461 773 405 689 235 587 597 528 837 433 551 |
| 2. Dome Petroleum Limited | EBU-132-74(AO-1) ^(g) | Sarnia, Ont. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 95-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 95-12-31 | 603 129 580 324 556 375 532 601 502 284 452 037 437 093 402 186 352 812 341 711 315 460 299 627 290 273 272 057 265 117 245 012 239 724 |

G-VII (Cont'd)

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, BUTANES, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1982

| IMPORTER | LICENCE OR ORDER NUMBER | POINT OF IMPORT | TERM OF LICENCE OR ORDER | | MAXIMUM IMPORT VOLUME (m ³) |
|---|---------------------------------|-----------------|--|--|---|
| | | | FROM | TO | |
| Butanes | | | | | |
| 3. Amoco Canada Petroleum Company Limited | EBU-133-74(AO-1) ^(g) | Sarnia, Ont. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 95-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 95-12-31 | 618 088 575 893 540 176 488 674 423 848 374 315 359 244 308 345 260 131 239 549 205 008 179 455 163 527 135 973 122 506 95 286 91 062 |
| 4. PanCanadian Gas Products Ltd. | EBU-134-74(AO-1) ^(g) | Sarnia, Ont. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 | 213 822 213 822 213 822 213 822 213 822 240 550 240 550 240 550 240 550 240 550 240 550 240 550 |

G-VII (Cont'd)

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, BUTANES, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1982

| IMPORTER | LICENCE OR ORDER NUMBER | POINT OF IMPORT | TERM OF LICENCE OR ORDER | | MAXIMUM IMPORT VOLUME (m ³) |
|-----------------------------------|-------------------------------|-----------------------------------|--|--|--|
| | | | FROM | TO | |
| Ethane | | | | | |
| 1. Dome Petroleum Limited | GL-45(AO-5) ^(h) | Sarnia, Ont. and Windsor, Ont. | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 530 325 537 245 547 703 565 080 571 399 549 883 |
| 2. Dome Petroleum Limited | GO-1-76(AO-1) ⁽ⁱ⁾ | Windsor, Ont. | 78-01-01 | 85-12-31 | 3 949 m ³ /a |
| Ethylene | | | | | |
| 1. Dow Chemical of Canada Limited | EYL-2-76(AO-1) ^(j) | Windsor, Ont. | 78-01-01 | 97-12-31 | 68 038 860 kg/a |

(a) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market.

(b) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.

(c) From the date of Initial Delivery.

(d) Twenty years and six months after the date of First Regular Delivery and not exceeding 25 years.

(e) This is an import-export licence whereby propane imported at Sarnia or Windsor may be exported at any place on the international boundary between Canada and the United States in the Province of Ontario.

(f) This order authorizes an import at Sarnia or Windsor, Ontario for subsequent export at any point on the international boundary between Canada and the United States.

(g) This order authorizes an export at Gretna, Manitoba for subsequent import at Sarnia, Ontario.

(h) This licence authorizes an export at any point on the international boundary between Canada and the United States. The quantity of ethane exported under the authority of this licence shall be equal to the quantities of ethane which the licensee imports near Sarnia and Windsor, Ontario.

(i) This order authorizes an export of ethane at Elmore, Saskatchewan for subsequent import at Windsor, Ontario.

(j) This order authorizes an export of ethylene at Elmore, Saskatchewan for subsequent import at Windsor, Ontario.

N/S Not specified

N/A Not applicable

G-VIII

IMPORTS OF NATURAL GAS

| Importer and Licence/Order ^(a) | 10 ⁶ m ³ | | | | | | |
|--|---------------------------------------|---------|---------|---------|---------------------------------------|--------------------------|---|
| | Cumulative ^(b) to 79-12-31 | 1980 | 1981 | 1982 | Cumulative ^(b) to 82-12-31 | Total Authorized Imports | Remaining ^(c) Under Licences |
| 1. Border Utilities Ltd. GO-2-66 | 13.0 | 0.8 | 0.8 | 1.0 | 15.6 | N/S | — |
| 2. Canadian Western Natural Gas Company Ltd. GO-6-65 | 19.9 | 2.4 | 2.2 | 3.6 | 28.1 | N/S | — |
| 3. Consolidated Natural Gas Limited GLI-5 | 3 606.9 | 423.2 | 376.2 | 282.9 | 4 689.2 | 18 951.3 | 14 262.1 |
| 4. TransCanada PipeLines Limited GL-21 | 66 421.1 | 5 288.5 | 5 851.8 | 5 174.3 | 82 735.7 | 169 967.0 | 87 231.3 |
| 5. ICG Transmission Holdings Limited GL-30 | 2 657.0 | 278.2 | 252.2 | 233.8 | 3 421.3 | 8 498.1 | 5 076.8 |
| 6. TransCanada PipeLines Limited GL-42 | 18 556.2 | 1 968.3 | 2 177.9 | 1 925.8 | 24 628.2 | 60 316.5 | 35 688.3 |
| 7. Gaz Métropolitain, inc. GO-3-80 | — | 0.7 | 0.9 | — | 1.6 | 13.3(f) | |
| Gross Imports ^(d) | 91 274.1 | 7 962.1 | 8 662.0 | 7 621.4 | 115 519.7 | | |
| Deduct Imports for Re-Exports: | | | | | | | |
| Item 3, GLI-5 | 3 606.9 | 423.2 | 376.2 | 282.9 | 4 689.2 | | |
| Item 7, GO-3-80 | — | 0.7 | 0.9 | — | 1.6 | | |
| Deduct Re-Imports ^(d) of Exports: | | | | | | | |
| Item 4, GL-21 | 66 421.1 | 5 288.5 | 5 851.8 | 5 174.3 | 82 735.7 | | |
| Item 5, GL-30 | 2 657.0 | 278.2 | 252.2 | 233.8 | 3 421.3 | | |
| Item 6, GL-42 | 18 556.2 | 1 968.3 | 2 177.9 | 1 925.8 | 24 628.2 | | |
| Net Imports | 32.9 | 3.2 | 3.0 | 4.6 | 43.7 | | |

(a) For information on the term, point of import and maximum authorized volumes under each licence and order, please see Appendix G-VII.

(b) Cumulative totals only includes those import licences and orders listed on the table.

(c) It may not be possible to import total volumes remaining under licences due to restrictions on peak day and annual volumes.

(d) The Gross Imports shown are the total for subsisting licences and orders. For volumes imported under expired licences and orders, please see previous Annual Reports of the National Energy Board.

Figures may not total due to rounding.

N/S Not specified

N/A Not applicable

— Amount too small to be expressed.

G-IX

EXPORTS OF PROPANE, BUTANES, ETHANE AND ETHYLENE UNDER LONG TERM LICENCES AND ORDERS*—1982 (VOLUME IN CUBIC METRES)

| EXPORTER | LICENCE OR ORDER NUMBER | 1980 ACTUAL | 1981 ACTUAL | 1982 (PRELIMINARY) |
|---|-------------------------|-------------|-------------|--------------------|
| A. <u>PROPANE</u> | | | | |
| 1. Dome Petroleum Limited | GL-31 | 661 124 | 656 190 | 620 476 |
| 2. Amoco Canada Petroleum Company Limited | GL-32 | 92 698 | 92 698 | 92 698 |
| 3. PanCanadian Gas Products Limited | GL-34 | — | — | — |
| 4. Dome Petroleum Limited | GL-46 | 362 438 | 438 516 | 333 100 |
| 5. Dome Petroleum Limited | EPR-908-77 | — | — | — |
| 6. Imperial Oil Limited | EPR-913-78 | 273 476 | — | — |
| 7. Dome Petroleum Limited | EPR-917-79 | 664 809 | 729 595 | 747 873 |
| 8. Amoco Canada Petroleum Company Limited | EPR-918-79 | 581 170 | 562 853 | 558 248 |

G-IX (cont'd)

EXPORTS OF PROPANE, BUTANES, ETHANE AND ETHYLENE UNDER LONG TERM LICENCES AND ORDERS*—1982 (VOLUME IN CUBIC METRES)

| EXPORTER | LICENCE OR ORDER NUMBER | 1980 ACTUAL | 1981 ACTUAL | 1982 (PRELIMINARY) |
|--|-------------------------|-------------|-------------|--------------------|
| 9. PanCanadian Gas Products Limited | EPR-919-79 | 251 479 | 273 793 | 309 168 |
| 10. Dome Petroleum Limited | EPR-921-80 | 25 838 | — | — |
| 11. Imperial Oil Limited | EPR-922-80 | 140 826 | 397 007 | 397 634 |
| 12. Amoco Canada Petroleum Company Limited | EPR-924-81 | N/A | — | — |
| 13. Amoco Canada Petroleum Company Limited | EPR-925-81 | N/A | — | — |
| 14. NGL Supply Limited | EPR-926-81 | N/A | 212 | 429 |
| 15. Dome Petroleum Limited | EPR-927-82 | N/A | N/A | — |
| B. BUTANES | | | | |
| 1. Dome Petroleum Limited | EBU-1-74 | 303 754 | 398 331 | 332 906 |
| 2. Dome Petroleum Limited | EBU-132-74 | 354 420 | 363 484 | 433 150 |
| 3. Amoco Canada Petroleum Company Limited | EBU-133-74 | 342 968 | 314 005 | 324 542 |
| 4. PanCanadian Gas Products Limited | EBU-134-74 | 110 636 | 123 351 | 139 317 |
| 5. Imperial Oil Limited | EBU-906-78 | 154 113 | — | — |
| 6. Dome Petroleum Limited | EBU-910-80 | 16 295 | — | — |
| 7. Imperial Oil Limited | EBU-911-80 | 75 543 | 234 763 | 227 822 |
| 8. Dome Petroleum Limited | EBU-913-81 | N/A | — | — |
| 9. Amoco Canada Petroleum Company Limited | EBU-914-81 | N/A | — | — |
| 10. Amoco Canada Petroleum Company Limited | EBU-915-81 | N/A | — | — |
| 11. Texaco Canada Inc. | EBU-916-82 | N/A | N/A | 24 184 |
| 12. Dome Petroleum Limited | EBU-927-82 | N/A | N/A | 2 090 |

G-IX (cont'd)

EXPORTS OF PROPANE, BUTANES, ETHANE AND ETHYLENE UNDER LONG TERM LICENCES AND ORDERS*—1982 (VOLUME IN CUBIC METRES)

| EXPORTER | LICENCE OR ORDER NUMBER | 1980 ACTUAL | 1981 ACTUAL | 1982 (PRELIMINARY) |
|-----------------------------------|-------------------------|-------------|-------------|--------------------|
| C. ETHANE | | | | |
| 1. Dome Petroleum Limited | GL-45 | 364 970 | 489 840 | 374 397 |
| 2. Dome Petroleum Limited | GL-47 | 1 738 889 | 1 831 819 | 1 873 189 |
| 3. Dome Petroleum Limited | GO-1-76 | — | — | — |
| 4. Dome Petroleum Limited | GL-51 | 1 090 000 | 934 951 | 1 092 479 |
| D. ETHYLENE | | | | |
| 1. Dow Chemical of Canada Limited | EYL-1-76 | 46 935 319 | 74 945 478 | — |
| 2. Dow Chemical of Canada Limited | EYL-2-76 | 68 000 000 | 68 000 000 | 65 951 333 |
| 3. Dow Chemical of Canada Limited | EYL-2-80 | — | 2 445 715 | — |
| 4. Imperial Oil Limited | EYL-2-79 | 3 386 970 | 1 245 700 | — |
| 5. Dow Chemical of Canada Limited | EYL-1-80 | 3 770 316 | — | — |
| 6. Dow Chemical of Canada Inc. | EYL-1-81 | N/A | — | — |
| 7. Esso Chemical Canada | EYL-1-82 | N/A | N/A | — |
| 8. Petrosar Limited | EYL-2-82 | N/A | N/A | — |

* See Appendix G-IV for particulars.

N/A Not Applicable

G-X

IMPORTS OF PROPANE, BUTANES, ETHANE AND ETHYLENE UNDER LONG TERM LICENCES AND ORDERS*—1982 (VOLUME IN CUBIC METRES)

| IMPORTER | LICENCE OR ORDER NUMBER | 1980 ACTUAL | 1981 ACTUAL | 1982 (PRELIMINARY) |
|--|-------------------------|-------------|-------------|--------------------|
| A. <u>PROPANE</u> | | | | |
| 1. Dome Petroleum Limited | GL-46 | 424 853 | 438 516 | 431 996 |
| 2. Dome Petroleum Limited | EPR-908-77 | — | — | — |
| 3. Imperial Oil Limited | EPR-913-78 | 273 476 | — | — |
| 4. Dome Petroleum Limited | EPR-917-79 | 610 586 | 718 179 | 751 585 |
| 5. Amoco Canada Petroleum Company Limited | EPR-918-79 | 514 293 | 573 386 | 558 901 |
| 6. PanCanadian Gas Products Limited | EPR-919-79 | 251 479 | 273 793 | 309 168 |
| 7. Dome Petroleum Limited | EPR-921-80 | 24 902 | — | — |
| 8. Imperial Oil Limited | EPR-922-80 | 121 042 | 380 116 | 376 999 |
| 9. Amoco Canada Petroleum Company Limited | EPR-924-81 | N/A | — | — |
| 10. Amoco Canada Petroleum Company Limited | EPR-925-81 | N/A | — | — |
| 11. NGL Supply Limited | EPR-926-81 | N/A | 641 | — |
| 12. Dome Petroleum Limited | EPR-927-82 | N/A | N/A | — |

G-X (cont'd)

IMPORTS OF PROPANE, BUTANES, ETHANE AND ETHYLENE UNDER LONG TERM LICENCES AND ORDERS*—1982 (VOLUME IN CUBIC METRES)

| IMPORTER | LICENCE OR ORDER NUMBER | 1980 ACTUAL | 1981 ACTUAL | 1982 (PRELIMINARY) |
|--|-------------------------|-------------|-------------|--------------------|
| B. BUTANES | | | | |
| 1. Dome Petroleum Limited | EBU-1-74 | 345 724 | 314 441 | 311 167 |
| 2. Dome Petroleum Limited | EBU-132-74 | 362 138 | 345 893 | 433 594 |
| 3. Amoco Canada Petroleum Company Limited | EBU-133-74 | 303 622 | 322 455 | 330 607 |
| 4. PanCanadian Gas Products Limited | EBU-134-74 | 110 636 | 123 351 | 139 317 |
| 5. Imperial Oil Limited | EBU-906-78 | 154 113 | — | — |
| 6. Dome Petroleum Limited | EBU-910-80 | 15 659 | — | — |
| 7. Imperial Oil Limited | EBU-911-80 | 43 430 | 225 405 | 218 997 |
| 8. Dome Petroleum Limited | EBU-913-81 | N/A | — | — |
| 9. Amoco Canada Petroleum Company Limited | EBU-914-81 | N/A | — | — |
| 10. Amoco Canada Petroleum Company Limited | EBU-915-81 | N/A | — | — |
| 11. Texaco Canada Inc. | EBU-916-82 | N/A | N/A | 19 402 |
| 12. Dome Petroleum Limited | EBU-927-82 | N/A | N/A | 2 090 |

* See Appendix G-VII for particulars.

| IMPORTER | LICENCE OR ORDER NUMBER | 1980 ACTUAL | 1981 ACTUAL | 1982 (PRELIMINARY) |
|-----------------------------------|-------------------------|-------------|-------------|--------------------|
| C. ETHANE | | | | |
| 1. Dome Petroleum Limited | GL-45 | 390 480 | 493 859 | 503 777 |
| 2. Dome Petroleum Limited | GO-1-76 | — | — | — |
| D. ETHYLENE | | | | |
| 1. Dow Chemical of Canada Limited | EYL-1-76 | 46 935 319 | 74 945 478 | — |
| 2. Dow Chemical of Canada Limited | EYL-2-76 | 68 000 000 | 68 000 000 | 65 951 333 |

* See Appendix G-VII for particulars.

N/A Not Applicable.

G-XI

NET EXPORTS OF PROPANE AND BUTANES

A) PROPANE (Volume in cubic metres)

| EXPORTER | 1980 ACTUAL | 1981 ACTUAL | 1982 (PRELIMINARY) |
|--|----------------|----------------|-----------------------|
| Atlantic Speedy Propane Ltd. ^(g) | 13 431 601 | 77 399 744 | 79 496 964 |
| Amoco Canada Petroleum Co. Ltd. | | | |
| Big Horn Supply Ltd. | 33 284 | 29 136 | 15 608 |
| B.P. Canada Inc. ^(f) | — | 1 532 | 283 |
| Burnwell Gas of Canada Ltd. | 34 960 | 35 442 | 24 941 |
| Canadian Enterprise Gas Products Ltd. | 75 006 | 51 852 | 62 912 |
| Canadian Superior Oil Ltd. | 100 109 | 53 062 | 68 468 |
| Can-Am Liquids Corp. Ltd. ^(a) | 1 186 | 10 282 | 13 728 |
| Chevron Standard Ltd. | 248 699 | 219 330 | 231 837 |
| Cigas Products Ltd. | 959 | — | — |
| Dynex Petroleum Ltd. ^(b) | 14 649 | 17 350 | 15 218 |
| Dillingham Corporation Canada Ltd. ^(c) | 56 525 | 18 974 | 9 458 |
| Dome Petroleum Limited | 817 063 | 695 511 | 822 584 |
| Elgin Petroleum Limited | 6 232 | 7 289 | 14 492 |
| Esso Resources Canada Limited | 428 100 | 392 653 | 322 735 |
| Gasbec Inc. | 56 789 | 36 344 | 43 958 |
| Gas Supply (Minneapolis) Ltd. | 3 138 | 454 | — |
| Gulf Canada Products Company | 516 727 | 448 050 | 502 170 |
| Home Oil Company Limited | 69 920 | 58 841 | 72 122 |
| Hudson's Bay Oil and Gas Company Limited | 60 859 | 55 861 | 11 214 |
| Husky Oil Operations Limited | — | — | 2 630 |
| ICG Canadian Propane Gas & Oil Ltd. ^(d) | 1 197 | 356 | 402 |
| Irving Oil Company | 11 965 | — | — |
| Koch Hydrocarbons Canada | 5 232 | 1 227 | 6 754 |
| Mobil Oil Canada Ltd. | 117 886 | 71 101 | 92 091 |
| N.G.L. Supply Ltd. | 35 277 | 14 719 | 17 293 |
| Northern Petro Products Ltd. | 1 305 | 1 802 | 1 539 |
| Northern Raymond Oil Co. Ltd. | 4 974 | — | 2 893 |
| PanCanadian Gas Products Ltd. | 181 065 | 181 113 | 259 997 |
| Petro-Canada Exploration Inc. | 257 640 | 281 711 | 348 809 |
| Petrosol International Ltd. | 7 146 | — | 16 592 |
| Proflame Limited ^(e) | — | — | 319 |
| Real International Marketing Ltd. | 1 741 | 10 576 | 1 789 |
| Shell Canada Resources Limited | 153 077 | 142 139 | 149 198 |
| Stephens Energy Limited | 37 290 | 67 014 | 119 688 |
| Stillings Canada Petroleum Company | 69 804 | 92 475 | 56 300 |
| Suncor Inc. ^(g) | 1 825 | — | 672 |
| Texaco Canada Inc. | 118 244 | 150 554 | 127 425 |
| Union Oil Co. of Canada Ltd. | 29 567 | 32 405 | 27 025 |
| Union Texas of Canada Ltd. | 58 484 | 57 892 | 41 233 |
| TOTALS | 4 049 538 | 3 636 868 | 4 001 420 |

(a) This company started exporting in July 1980.

(b) This company was formerly Dalco Petroleum Ltd.

(c) Prior to July 1980, exports were listed under the name of Cammore Oil and Gas Limited.

(d) Prior to January 1980, exports were listed under the name of Canadian Propane Gas & Oil Ltd.

(e) This company started exporting in April 1982.

(f) This company started exporting in August 1981.

(g) This company started exporting in November 1980.

G-XI (cont'd)

NET EXPORTS OF PROPANE AND BUTANES

B) BUTANES (Volume in cubic metres)

| EXPORTER | 1980 ACTUAL | 1981 ACTUAL | 1982 (PRELIMINARY) |
|--|----------------|----------------|-----------------------|
| Amoco Canada Petroleum Co. Ltd. | 323 693 3 | 399 348 — | 465 180 — |
| Belgo Canada Manufacturing Co. Ltd. | 18 687 | 16 951 | 4 635 |
| Big Horn Supply Ltd. | — | — | — |
| Canada Cities Service, Ltd. | 34 634 | 36 348 | 55 735 |
| Canadian Enterprise Gas Products Ltd. | 32 088 | 85 777 | 58 109 |
| Canadian Superior Oil Ltd. | 7 655 | 6 218 | 5 206 |
| Can-Am Liquids Corp. Ltd. ^(a) | 6 136 | 5 640 | 27 476 |
| Chevron Standard Ltd. | 25 271 | 18 380 | 17 933 |
| Dynex Petroleum Ltd. ^(b) | 372 093 | 457 444 | 629 273 |
| Dome Petroleum Limited | 20 262 | 8 488 | 5 996 |
| Elgin Petroleum Limited | 94 738 | 130 732 | 150 644 |
| Esso Resources Canada Limited | — | 117 | 22 110 |
| Gas Supply (Minn.) Ltd. | — | — | 2 421 |
| Gray Oil Corporation ^(c) | 65 952 | 107 763 | 113 724 |
| Home Oil Company Limited | 249 024 | 237 782 | 56 932 |
| Hudson's Bay Oil and Gas Company Limited | 5 603 | 6 125 | 11 978 |
| Husky Oil Operations Ltd. | 209 204 | 183 599 | 180 929 |
| Koch Hydrocarbons Canada | 90 780 | 33 321 | 64 688 |
| Mobil Oil Canada Ltd. | 12 048 | 8 507 | — |
| Murphy Oil Company Ltd. | 46 165 | 50 167 | 42 422 |
| N.G.L. Supply Ltd. | 5 475 | 15 449 | 963 |
| Northern Petro Products Ltd. | 2 180 | 493 | 733 |
| Northern Raymond Oil Co. Ltd. | 47 715 | 68 124 | 135 503 |
| PanCanadian Gas Products Ltd. | 81 157 | 92 386 | 120 232 |
| Petro-Canada Exploration Inc. | 43 398 | 17 695 | 45 086 |
| Petrosol International Ltd. | 2 126 | 9 236 | 1 774 |
| Real International Marketing Ltd. ^(e) | — | — | 122 |
| Rivecal Energy Limited ^(d) | 714 | — | — |
| G.W. Sample Enterprises | 145 274 | 168 437 | 146 481 |
| Shell Canada Resources Limited | 51 245 | 107 523 | 119 547 |
| Stephens Energy Limited | 160 945 | 140 784 | 115 557 |
| Stillings Canada Petroleum Company | 113 517 | 129 017 | 185 724 |
| Texaco Canada Inc. | 25 887 | 1 889 | 5 575 |
| Union Oil Co. of Canada Ltd. | TOTALS | 2 293 669 | 2 543 740 |
| | | | 2 792 688 |

(a) This company started exporting in July 1980.

(b) This company was formerly Dalco Petroleum Ltd.

(c) This company started exporting in June, 1982.

(d) This company started exporting in November 1982.

(e) This company started exporting in June 1981.

O-I

CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY FOR OIL PIPELINES ISSUED DURING 1982

No Certificates issued during 1982.

O-II

ORDERS RELATING TO NEW OIL PIPELINE FACILITIES ISSUED DURING 1982 CLASS "B" CONSTRUCTION

| APPLICANT | FACILITIES | ESTIMATED COST | ISSUED | ORDER NO. |
|----------------------------------|---|----------------|---------------|-----------|
| Manito Pipelines Ltd. | Cone roof storage tank at Kerrobert, Saskatchewan | \$890,000 | 30 Apr. 1982 | XO-1-82 |
| Manito Pipelines Ltd. | Pumping facilities at Unity and Grill Lake Stations, Saskatchewan | \$380,000 | 15 Oct. 1982 | XO-3-82 |
| Trans Mountain Pipe Line Company | Upgrading of pumping stations in Alberta and British Columbia | \$8,020,000 | 22 Sept. 1982 | XO-2-82 |

O-II (cont'd)

ORDERS RELATING TO NEW OIL PIPELINE FACILITIES ISSUED DURING 1982 CLASS "C" CONSTRUCTION

| APPLICANT | FACILITIES | ESTIMATED COST | ISSUED | ORDER NO. |
|-----------------------------------|---|----------------|--------------|-----------|
| Cochin Pipe Lines Ltd. | Total | \$2,437,257 | | |
| | Pump stations, metering, communication system, buildings, etc. | \$2,237,390 | 24 Feb. 1982 | XOM-4-82 |
| | Improvements to pipeline and the communication system | \$199,867 | 24 Nov. 1982 | XOM-12-82 |
| Dome NGL Pipeline Ltd. | Telemetry system | \$287,000 | 8 July 1982 | XOM-7-82 |
| Interprovincial Pipe Line Limited | Total | \$30,538,900 | | |
| | Improvements to pumping stations and the communication system, upgrading of NGL facilities and mainline modifications | \$12,519,900 | 13 Aug. 1982 | XOM-8-82 |
| Manito Pipelines Ltd. | Total | \$1,491,885 | | |
| | Computer supervisory system, communications system, etc. | \$1,369,252 | 5 May 1982 | XOM-5-82 |
| | Truck terminal automation, station fencing, etc. | \$122,633 | 13 Oct. 1982 | XOM-9-82 |
| Montreal Pipe Line Limited | Total | \$302,900 | | |
| | Data acquisition equipment, laboratory facilities, etc. | \$270,800 | 10 Feb. 1982 | XOM-2-82 |
| | Cathodic protection rectifier, maintenance and operating tools and equipment | \$32,100 | | |
| Petroleum Transmission Company | Upgrade of control system | \$1,048,665 | 10 Feb. 1982 | XOM-3-82 |
| Trans Mountain Pipe Line Company | Total | \$5,322,187 | | |
| | Work equipment, furniture and fixtures, tanks, station equipment, etc. | \$1,413,040 | 10 Mar. 1982 | XOM-1-82 |
| | Automotive equipment | \$598,950 | 1 Dec. 1982 | XOM-11-82 |
| Trans-Northern Pipelines Inc. | Tanks, automotive equipment, work equipment, etc. | \$3,310,197 | 1 Dec. 1982 | XOM-13-82 |
| | Total | \$742,000 | | |
| | Computer equipment, densitometers vehicles, etc. | \$329,000 | 27 Oct. 1982 | XOM-10-82 |
| Westspur Pipe Line Company | Modifications to pump, meter and junction locations | \$413,000 | 1 Dec. 1982 | XOM-14-82 |
| | Pipeline replacements | \$445,920 | 4 June 1982 | XOM-6-82 |

O-III

EXPORTS OF CANADIAN CRUDE OIL AND EQUIVALENT TO THE UNITED STATES 1982 AND 1981

| Company | Destination | 1982 | | 1981 | |
|--------------------------------|----------------------|-----------------------------------|------------------|-----------------------------------|------------------|
| | | Total Cubic Metres for Year | Daily Average | Total Cubic Metres for Year | Daily Average |
| Districts I-IV | | | | | |
| Amoco Production Company | Whiting, Indiana | 214 363.4 | 587.3 | — | — |
| Ashland Oil Inc. | Canton, Ohio | — | — | 4 224.1 | 11.5 |
| Ashland Oil Inc. | N. Tonawanda, N.Y. | — | — | 31 132.3 | 85.2 |
| Ashland Oil Inc. | St. Paul, Minnesota | 138 718.7 | 380.1 | 95 391.6 | 261.3 |
| Cdn. Hydrocarbons Ltd. | Cut Bank, Montana | 1 237.0 | 3.4 | 1 812.9 | 4.9 |
| Conoco Inc. | Billings, Montana | 82 738.6 | 226.7 | — | — |
| Consumers Power Company | Bay City, Michigan | 1 729.5 | 4.7 | 4 256.1 | 11.6 |
| Farmers Union Central Exchange | Billings, Montana | 169 807.2 | 465.2 | — | — |
| Koch Refining Co. | Pine Bend, Minnesota | 6 773 273.5 | 18 556.9 | 4 744 250.1 | 12 997.9 |
| Laketon Asphalt Refining Inc. | Laketon, Indiana | 151 412.9 | 414.8 | — | — |
| Marathon Oil Co. | Detroit, Michigan | 28 839.0 | 79.0 | — | — |
| Mobil Oil Corp. | Joliet, Illinois | 1 084 495.0 | 2 971.2 | 559 340.9 | 1 532.4 |
| Murphy Oil Corp. | Superior, Wisconsin | 290 698.2 | 796.4 | 282 690.0 | 774.4 |
| Union Oil Co. of California | Lemont, Illinois | 67 062.9 | 183.7 | 42 467.2 | 116.3 |
| Other | | 54 292.9 | 148.7 | 4 224.1 | 11.5 |
| Total Districts I-IV | | 9 058 668.8 | 24 818.1 | 5 766 110.4 | 15 797.5 |

O-IV

EXPORT CHARGES IN 1982 FOR CRUDE OIL AND REFINED PETROLEUM PRODUCTS

(\$ PER CUBIC METRE)

| TYPE | JAN. ⁽¹⁾ | FEB. | MAR. | APR. | MAY | JUNE | JULY ⁽²⁾ | AUG. | SEP. | OCT. | NOV. | DEC. |
|------------------------------------|---------------------|--------|--------|--------|--------|--------|---------------------|--------|--------|-------|-------|-------|
| Light, Medium and Condensate | 149.30 | 135.15 | 135.15 | 103.65 | 103.65 | 103.65 | 109.95 | 109.95 | 97.20 | 97.20 | 97.20 | 97.20 |
| Cold Lake | — | — | — | — | — | — | — | — | — | 24.60 | 24.60 | 24.60 |
| Del Bonita | 139.35 | 125.25 | 125.25 | 93.75 | 93.75 | 93.75 | 100.05 | 100.05 | — | — | — | — |
| Reagan | 151.45 | 137.10 | 137.10 | 105.60 | 105.60 | 105.60 | 111.90 | 111.90 | 98.95 | 97.75 | 97.75 | 97.75 |
| Lloydminster-type Blends | 91.40 | 73.30 | 58.00 | 45.40 | 45.40 | 45.40 | 58.00 | 58.00 | 44.40 | 44.40 | 44.40 | 44.40 |
| Wainwright/Kinsella Blend | 90.40 | 71.65 | 56.35 | 43.75 | 43.75 | 43.75 | 56.35 | 56.35 | 43.15 | 43.15 | 43.15 | 43.15 |
| Fosterton | 96.15 | 77.75 | 62.45 | 49.85 | 49.85 | 49.85 | 62.45 | 62.45 | 51.10 | 51.10 | 51.10 | 51.10 |
| Smiley-Coleville | 90.30 | 71.65 | 56.35 | 43.75 | 43.75 | 43.75 | 56.35 | 56.35 | 44.35 | 45.75 | 45.75 | 45.75 |
| Bow River | 102.75 | 83.85 | 68.55 | 55.95 | 55.95 | 55.95 | 68.55 | 68.55 | 56.60 | 55.15 | 55.15 | 55.15 |
| Midale | 101.30 | 82.15 | 66.85 | 54.25 | 54.25 | 54.25 | 66.85 | 66.85 | 54.25 | 54.25 | 54.25 | 54.25 |
| Motor Gasoline & Jet B | 96.90 | 92.20 | 82.75 | 106.70 | 101.45 | 101.45 | 110.90 | 109.50 | 90.60 | 90.60 | 79.85 | 79.85 |
| Middle Distillates | 104.15 | 113.60 | 107.30 | 128.05 | 109.20 | 109.20 | 121.80 | 109.50 | 109.50 | 96.90 | 90.60 | 90.60 |
| Heavy Fuel Oil ex B.C. ex other | 34.30 | 20.15 | 70.35 | 101.45 | 101.45 | 101.45 | 106.65 | 109.50 | 84.90 | 82.50 | 79.85 | 73.95 |
| Partially Processed Oils | 78.35 | 62.95 | 70.35 | 101.45 | 101.45 | 101.45 | 106.65 | 95.35 | 84.90 | 82.50 | 79.85 | 73.95 |

1) Reduction of \$14.15 per cubic metre applicable in respect of volumes of crude oil and equivalent exported in January which entered exporting pipeline systems after 1 January 1982.

2) Reduction of \$14.15 per cubic metre applicable in respect of volumes of crude oil and equivalent exported in July which entered exporting pipeline systems after 1 July 1982.

O-V

EXCHANGES OF CRUDE OIL AND EQUIVALENT WITH THE UNITED STATES VIA MID-CONTINENT PIPELINE SYSTEMS—1982

| LICENCE HOLDER | EXCHANGE PARTNER | QUANTITY IN CUBIC METRES | | |
|--------------------------|--------------------------------|--------------------------|-------------|-------------|
| | | LICENSED | EXPORTED | IMPORTED |
| BP Oil Ltd. | Conoco Inc. | — | — | 2 175.6 |
| BP Oil Ltd. | Murphy Oil Corporation | 497 977.0 | 167 073.3 | 169 782.6 |
| BP Oil Ltd. | Phillips Petroleum Corporation | — | 5 065.4 | — |
| Gulf Canada Products Co. | Conoco Inc. | — | — | 6 904.6 |
| Imperial Oil Ltd. | Exxon Corporation | 195 580.0 | 187 654.8 | 207 872.9 |
| Imperial Oil Ltd. | Gladieux Refinery Inc. | 10 700.0 | 2 013.9 | 2 150.0 |
| Shell Canada Ltd. | Conoco Inc. | 1 089 023.0 | 1 223 712.0 | 1 127 548.2 |
| Shell Canada Ltd. | Farmers Union Central Exchange | 808 647.2 | 714 169.4 | 741 902.6 |
| Shell Canada Ltd. | Shell Oil Co. | 1 083 770.1 | 1 027 318.4 | 1 031 118.1 |
| Shell Canada Ltd. | Simons Crude Oil Co. | 44 023.7 | 24 740.9 | 24 742.4 |
| Sunoco Inc. | Ashland Oil Inc. | 213 855.0 | 47 843.7 | 36 916.2 |
| Texaco Canada Inc. | Exxon Corporation | — | 12 704.8 | 296.0 |
| TOTAL | | 3 943 576.0 | 3 412 296.6 | 3 351 409.2 |

O-VI

EASTERN CANADIAN EXCHANGE SHIPMENTS — 1982

| LICENCE HOLDER | EXCHANGE PARTNER | QUANTITY IN CUBIC METRES | | |
|----------------------|------------------|--------------------------|-----------|-----------|
| | | LICENSED | EXPORTED | IMPORTED |
| Ultramar Canada Inc. | Conoco Inc. | 156 767.0 | 155 022.1 | 154 968.7 |
| Ultramar Canada Inc. | Texaco Inc. | 96 990.0 | 96 959.6 | 96 574.0 |
| TOTAL | | 253 757.0 | 251 981.7 | 251 542.7 |

O-VII

EXPORTS OF LICENSED PETROLEUM PRODUCTS AND IMPORTS OF HEAVY FUEL OIL—1982 (CUBIC METRES)

| MONTH | PARTIALLY PROCESSED OIL | EXPORTS | | | | | IMPORTS |
|-----------|-------------------------|--------------------------|----------------|-------------------|-----------|-------------|------------|
| | | MOTOR GASOLINE AND JET B | HEAVY FUEL OIL | MIDDLE DISTILLATE | ASPHALT* | TOTAL | |
| January | 11 673.8 | 47 018.3 | 113 251.2 | 120 366.4 | — | 292 309.7 | — |
| February | 194.1 | 18 668.7 | 192 204.7 | 93 537.7 | — | 304 605.2 | — |
| March | 10 912.1 | 2 665.2 | 149 315.4 | 30 576.3 | — | 193 469.0 | — |
| April | 651.9 | 3 287.8 | 64 600.9 | 19 911.0 | — | 88 451.6 | — |
| May | 271.0 | 71 625.4 | 173 971.8 | 102 030.1 | — | 347 898.3 | — |
| June | 171.7 | 152 010.5 | 222 257.8 | 82 666.0 | 32 218.6 | 489 324.6 | 76 828.8 |
| July | 10 010.4 | 135 720.3 | 156 080.8 | 24 235.8 | 59 157.5 | 385 204.8 | 102 423.3 |
| August | 19 988.7 | 97 791.4 | 148 810.3 | 104 450.9 | 63 104.7 | 434 146.0 | 139 234.0 |
| September | 9 563.5 | 23 742.6 | 157 809.6 | 49 915.2 | 58 840.8 | 299 871.7 | 115 813.4 |
| October | 29 394.7 | 44 747.5 | 176 886.5 | 109 355.9 | 28 238.0 | 388 622.6 | 58 691.2 |
| November | 19 991.2 | 4 916.1 | 137 629.6 | 139 464.6 | 13 051.9 | 315 053.4 | 80 311.0 |
| December | 20 055.9 | 7 234.9 | 168 234.9 | 159 321.3 | 768.7 | 355 615.7 | 115 000.00 |
| TOTAL | 132 879.0 | 609 428.7 | 1 861 053.5 | 1 035 831.2 | 255 380.2 | 3 894 572.6 | 688 301.7 |

* The Board began licensing exports of asphalt and imports of heavy fuel oil in June 1982.

O-VIII

EXPORTS OF LICENSED AVIATION AND MARINE FUELS USED IN INTERNATIONAL TRANSPORTATION (CUBIC METRES)

| MONTH | JET A ⁽¹⁾ | JET B ⁽¹⁾ | HEAVY FUEL OIL | MARINE DIESEL/GASOIL | TOTAL |
|-----------|----------------------|----------------------|----------------|----------------------|-----------|
| January | 85 536 | 5 838 | 68 178 | 15 985 | 175 537 |
| February | 70 231 | 9 720 | 89 554 | 19 377 | 188 882 |
| March | 23 545 | 3 147 | 72 477 | 15 802 | 114 971 |
| April | 34 588 | 2 090 | 115 314 | 99 495 | 251 487 |
| May | 34 028 | 2 995 | 211 750 | 40 905 | 289 678 |
| June | 35 757 | 5 097 | 171 446 | 48 806 | 261 106 |
| July | 51 635 | 7 646 | 208 446 | 50 935 | 318 662 |
| August | 41 246 | 10 002 | 139 326 | 42 277 | 232 851 |
| September | 44 449 | 22 160 | 130 898 | 43 773 | 241 280 |
| October | 39 874 | 9 580 | 146 494 | 41 686 | 237 634 |
| November | 24 835 | 14 013 | 172 690 | 41 320 | 252 858 |
| December | 32 620 | 5 060 | 136 134 | 35 310 | 209 124 |
| TOTAL | 518 344 | 97 348 | 1 662 707 | 495 671 | 2 774 070 |

(1) March volumes onward exclude fuel consumed by Canadian airlines.

E-I

**CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY FOR
INTERNATIONAL POWER LINES PURSUANT TO SECTION 44
ISSUED DURING 1982**

No certificates were issued in 1982

E-II

ORDERS RELATING TO INTERNATIONAL POWER LINES ISSUED DURING 1982

| TYPE OF ORDER | APPLICANT | FACILITIES | ISSUED | ORDER NO. |
|---|--|--|-------------|----------------|
| Orders Under the International Power Line Regulations | 1. The New Brunswick Electric Power Commission | Order approving a change in the description of the existing international power line authorized by Certificate No. EC-2 | 9 July 1982 | AO-1-EC-2 |
| | 2. The New Brunswick Electric Power Commission | Order aproving a change in the description of the existing international power line authorized by Certificate No. EC-III-7 | 9 July 1982 | AO-1-EC-III-7 |
| | 3. The New Brunswick Electric Power Commission | Order approving a change in the description of the existing international power line authorized by Certificate No. EC-III-18 | 9 July 1982 | AO-1-EC-III-18 |
| | 4. The New Brunswick Electric Power Commission | Order approving a change in the description of the existing international power line authorized by Order No. XE-1-63 | 9 July 1982 | AO-1-XE-I-63 |
| | 5. Hydro-Québec | Order approving a change in the description of the existing international power line authorized by Certificate No. EC-46 | 9 July 1982 | AO-1-EC-46 |
| | 6. Hydro-Québec | Order approving a change in the description of the existing international power line authorized by Certificate No. EC-47 | 9 July 1982 | AO-1-EC-47 |
| | 7. Hydro-Québec | Order approving a change in the description of the existing international power line authorized by Certificate No. EC-50 | 9 July 1982 | AO-1-EC-50 |
| | 8. Hydro Québec | Order approving a change in the description of the existing international power line authorized by Order No. XE-3-64 | 9 July 1982 | AO-1-XE-3-64 |
| | 9. Ontario Hydro | Order approving a change in the description of the existing international power line authorized by Certificate No. EC-12 | 9 July 1982 | AO-2-EC-12 |
| | 10. Ontario Hydro | Order correcting a typographical error in the description of the existing international power line authorized by Certificate No. EC-III-13 | 9 July 1982 | AO-1-EC-III-13 |
| | 11. Canadian Niagara Power Company Limited | Order approving a change in the description of the existing international power line authorized by Certificate No. EC-22 | 9 July 1982 | AO-2-EC-22 |
| | 12. The Canadian Transit Power Company | Order approving a change in the description of the existing international power line authorized by Certificate No. EC-44 | 9 July 1982 | AO-1-EC-44 |
| | 13. Roseau Electric Co-operative Inc. | Order correcting a typographical error in the description of the existing international power line authorized by Order No. XE-1-80 | 9 July 1982 | AO-1-XE-1-80 |
| | 14. Saskatchewan Power Corporation | Order approving a change in the description of the existing international power line authorized by Certificate No. EC-III-19 | 9 July 1982 | AO-1-EC-III-19 |
| | 15. Southern Utilities Company, Ltd. | Order approving a change in the description of the existing international power line authorized by Certificate No. EC-54 | 9 July 1982 | AO-1-EC-54 |

E-II

ORDERS RELATING TO INTERNATIONAL POWER LINES ISSUED DURING 1982

| TYPE OF ORDER | APPLICANT | FACILITIES | ISSUED | ORDER NO. |
|---|---|---|--------------|---------------|
| | 16. West Kootenay Power and Light Company, Ltd. | Order approving a change in the description of the existing international power line authorized by Certificate No. EC-41 | 9 July 1982 | AO-1-EC-41 |
| | 17. Cominco Ltd. | Order approving a change in the description of the existing international power line authorized by Certificate No. EC-III-1 | 9 July 1982 | AO-1-EC-III-1 |
| | 18. British Columbia Hydro and Power Authority | Order approving a change in the description of the existing international power line authorized by Certificate No. EC-30 | 9 July 1982 | AO-1-EC-30 |
| | 19. British Columbia Hydro and Power Authority | Order approving a change in the description of the existing international power line authorized by Certificate No. EC-III-4 | 9 July 1982 | AO-1-EC-III-4 |
| | 20. Hydro-Québec | Order approving a change in the description of the existing international power line authorized by Order No. XE-1-64 | 22 Dec. 1982 | AO-1-XE-I-64 |
| | 21. Hydro-Québec | Order approving a change in the description of the existing international power line authorized by Order No. XE-2-64 | 22 Dec. 1982 | AO-1-XE-2-64 |
| | 22. Hydro-Québec | Order approving a change in the description of the existing international power line authorized by Order No. XE-3-64 | 22 Dec. 1982 | AO-2-XE-3-64 |
| Leaves to Abandon and Revocation Orders to Certificates of Public Convenience Pursuant to Subsections 43(3) and 47(3) | 1. Fraser Inc. | Order granting the leave to abandon the operation of the international power line authorized by Certificate No. EC-32 | 9 July 1982 | RO-EC-82 |
| | 2. The New Brunswick Electric Power Commission | Order granting the leave to abandon the operation of the international power line authorized by Order No. XE-1-72 | 9 July 1982 | RO-XE-1-72 |
| | 3. Litton Business & Industrial Systems of Canada Limited, Butterfield Division | Order granting the leave to abandon the operation of the international power line authorized by Certificate No. EC-43 | 9 July 1982 | RO-EC-43 |
| | 4. The Manitoba Hydro-Electric Board | Order granting the leave to abandon the operation of the international power line authorized by Certificate No. EC-26 | 9 July 1982 | RO-EC-26 |
| | 5. The Manitoba Hydro-Electric Board | Order granting the leave to abandon the operation of the international power line by Order No. XE-1-61 | 9 July 1982 | RO-XE-1-61 |

E-II

ORDERS RELATING TO INTERNATIONAL POWER LINES ISSUED DURING 1982

| TYPE OF ORDER | APPLICANT | FACILITIES | ISSUED | ORDER NO. |
|---|------------------|--|--------------|-----------|
| Order to Certificate of Public Convenience and Necessity Pursuant to Subsection 17(3) | 1. Ontario Hydro | Order authorizing the assignment and transfer by Boise Cascade Canada Limited of Certificate of Public Convenience and Necessity No. EC-III-11 to Ontario Hydro | 14 Oct. 1982 | MO-9-82 |
| Exemption Orders pursuant to Section 49 | 1. Hydro-Québec | One international power line extending from the distribution transformer TD1V to a point on the international boundary in the Saint-Régis Indian Reserve, in the Province of Québec. This single circuit three-phase line operates at 48 kV and 12 kV. | 22 Dec. 1982 | XE-1-82 |
| | 2. Hydro-Québec | One international power line extending from the distribution transformer TD1C to a point on the international boundary in the Saint-Régis Indian Reserve, in the Province of Québec. This single circuit three-phase line operates at 13.2 kV. | 22 Dec. 1982 | XE-2-82 |
| | 3. Hydro-Québec | One international power line extending from the distribution transformer TD1S to a point on the international boundary in the Municipality of Stanhope, in the Province of Québec. This single circuit three-phase line operates at 25 kV. | 22 Dec. 1982 | XE-3-82 |
| | 4. Hydro-Québec | One international power line extending from the distribution transformer TD1H to a point on the international boundary in the Municipality of Hereford, in the Province of Québec. This single circuit three-phase line operates at 25 kV. | 22 Dec. 1982 | XE-4-82 |

E-III

LICENCES TO EXPORT ELECTRIC POWER AND ENERGY PURSUANT TO SECTION 82 ISSUED DURING 1982

| APPLICANT | CLASS | MEGAWATTS | ANNUAL GIGAWATT-HOURS | TERM | | APPLICATION HEARD | ISSUED | LICENCE NO. |
|--|------------------------|-----------|-----------------------|----------|----------|---------------------|--------------|-------------|
| | | | | FROM | TO | | | |
| 1. The New Brunswick Electric Power Commission | Firm | 100 | 876 | 82-11-01 | 90-10-31 | 24 Nov.—2 Dec. 1981 | 11 Mar. 1982 | EL-137 |
| 2. The New Brunswick Electric Power Commission | Firm | 100 | 876 | 82-11-01 | 95-10-31 | 24 Nov.—2 Dec. 1981 | 11 Mar. 1982 | EL-138 |
| 3. The New Brunswick Electric Power Commission | Firm | 15 | 92 | 82-11-01 | 90-10-31 | 24 Nov.—2 Dec. 1981 | 11 Mar. 1982 | EL-139 |
| 4. The New Brunswick Electric Power Commission | Interruptible | — | 6 485* | 82-11-01 | 90-10-31 | 24 Nov.—2 Dec. 1981 | 11 Mar. 1982 | EL-140 |
| 5. The New Brunswick Electric Power Commission | Carrier Transfer | 140 | 1 226.4 | 82-11-01 | 90-10-31 | 24 Nov.—2 Dec. 1981 | 11 Mar. 1982 | EL-141 |
| 6. The New Brunswick Electric Power Commission | Short Term Firm | 20 | 140 | 82-11-01 | 90-10-31 | 24 Nov.—2 Dec. 1981 | 11 Mar. 1982 | EL-142 |
| 7. The New Brunswick Electric Power Commission | Interruptible | — | 300 | 82-11-01 | 90-10-31 | 24 Nov.—2 Dec. 1981 | 11 Mar. 1982 | EL-143 |
| 8. The New Brunswick Electric Power Commission | Carrier Transfer | 50 | 250 | 82-11-01 | 90-10-31 | 24 Nov.—2 Dec. 1981 | 11 Mar. 1982 | EL-144 |
| 9. The New Brunswick Electric Power Commission | Interruptible | — | 179 | 82-11-01 | 90-10-31 | 24 Nov.—2 Dec. 1981 | 11 Mar. 1982 | EL-145 |
| 10. Cominco Ltd. | Carrier Transfer | — | 50 | 83-01-01 | 87-12-31 | 7 Oct. 1982 | 22 Nov. 1982 | EL-146 |
| 11. Cominco Ltd. | Interruptible Transfer | — | 1 100 | 83-01-01 | 87-12-31 | 7 Oct. 1982 | 22 Nov. 1982 | EL-147 |
| 12. Cominco Ltd. | Misc. Firm Equichange | — | 250 | 83-01-01 | 87-12-31 | 7 Oct. 1982 | 22 Nov. 1982 | EL-148 |
| 13. Cominco Ltd. | Circulating Power | — | 1 000 | 83-01-01 | 87-12-31 | 7 Oct. 1982 | 22 Nov. 1982 | EL-149 |

* Less exports under Licences EL-64, EL-137 and EL-138.

E-IV

ORDERS RELATING TO EXPORT OF ELECTRIC POWER AND ENERGY ISSUED DURING 1982

Orders Issued Pursuant to Section 7 of the Regulations under Part VI of the Act

| APPLICANT | CLASS | KILOWATTS | ANNUAL KILOWATT HOURS | TERM | | ISSUED | ORDER NO. |
|---|-------|-----------|-----------------------|----------|----------|---------------|-----------|
| | | | | FROM | TO | | |
| 1. Hydro-Québec | Firm | 20 | 35 000 | 82-04-15 | 85-04-14 | 19 Mar. 1982 | ELO-158 |
| 2. Hydro-Québec | Firm | 75 | 200 000 | 82-04-15 | 85-04-14 | 19 Mar. 1982 | ELO-159 |
| 3. Hydro-Québec | Firm | 20 | 100 000 | 82-04-15 | 85-04-14 | 19 Mar. 1982 | ELO-160 |
| 4. Hydro-Québec | Firm | 35 | 65 000 | 82-04-15 | 85-04-14 | 19 Mar. 1982 | ELO-161 |
| 5. Hydro-Québec | Firm | 65 | 150 000 | 82-04-15 | 85-04-14 | 19 Mar. 1982 | ELO-162 |
| 6. Hydro-Québec | Firm | 10 | 10 000 | 82-04-15 | 85-04-14 | 19 Mar. 1982 | ELO-163 |
| 7. Hydro-Québec | Firm | 2 | 2 000 | 82-04-15 | 85-04-14 | 19 Mar. 1982 | ELO-164 |
| 8. Hydro-Québec | Firm | 57 | 150 000 | 82-04-15 | 85-04-14 | 19 Mar. 1982 | ELO-165 |
| 9. Ontario Hydro | Firm | 44 | 80 000 | 82-05-15 | 85-05-14 | 6 May 1982 | ELO-166 |
| 10. The Canadian Transit Company | Firm | 100 | 225 000 | 82-08-01 | 85-05-31 | 4 June 1982 | ELO-167 |
| 11. British Columbia Hydro and Power Authority | Firm | 200 | 600 000 | 82-12-01 | 85-11-30 | 19 June 1982 | ELO-168 |
| 12. The New Brunswick Electric Power Commission | Firm | 200 | 250 000 | 82-10-21 | 85-10-20 | 3 Aug. 1982 | ELO-169 |
| 13. The New Brunswick Electric Power Commission | Firm | 20 | 30 000 | 82-10-21 | 85-10-20 | 3 Aug. 1982 | ELO-170 |
| 14. The New Brunswick Electric Power Commission | Firm | 50 | 20 000 | 82-10-21 | 85-10-20 | 3 Aug. 1982 | ELO-171 |
| 15. The Manitoba Hydro-Electric Board | Firm | 900 | 7 884 000 | 82-10-01 | 85-09-30 | 17 Aug. 1982 | ELO-172 |
| 16. The Detroit and Windsor Subway Company | Firm | 300 | 2 000 000 | 83-01-01 | 85-11-30 | 16 Sept. 1982 | ELO-173 |
| 17. Cedars Rapids Transmission Company Limited | Firm | — | 20 000 000 | 83-01-01 | 85-12-30 | 20 Nov. 1982 | ELO-174 |

E-IV (Cont'd)

ORDERS RELATING TO EXPORT OF ELECTRIC POWER AND ENERGY ISSUED DURING 1982

Amending Orders Issued Relative to Power and Energy

| APPLICANT | ASSOCIATED LICENCE | ISSUED | ORDER NO. | COMMENTS |
|--|--------------------|--------------|-------------|--|
| 1. The New Brunswick Electric Power Commission | EL-65 | 4 Mar. 1982 | A0-2-EL-65 | Amendment increasing the quantity of interruptible energy to be exported during 1982 in proportion with a reduction of firm exports under Licence EL-64. |
| 2. Canadian Niagara Power Company, Limited | EL-124 | 17 June 1982 | A0-1-EL-124 | Amendment reducing the quantity of firm energy to be exported in proportion with an increase in exports of interruptible energy under Licence EL-125. |
| 3. Canadian Niagara Power Company, Limited | EL-125 | 17 June 1982 | A0-1-EL-125 | Amendment increasing the quantity of interruptible energy to be exported in proportion with a reduction of firm exports under Licence EL-124. |
| 4. Hydro-Québec | EL-113 | 24 June 1982 | A0-1-EL-113 | Amendment including a new Interconnection Agreement with Niagara Mohawk Power Corporation. |
| 5. Saskatchewan Power Corporation | EL-117 | 20 Aug. 1982 | A0-1-EL-117 | Amendment reflecting the intent of the Board at the time it inserted Condition 9, paragraph (a) in the licence. |
| 6. Saskatchewan Power Corporation | EL-118 | 20 Aug. 1982 | A0-1-EL-121 | Amendment reflecting the intent of the Board at the time it inserted Condition 11, paragraph (a) in the licence. |
| 7. Saskatchewan Power Corporation | EL-119 | 20 Aug. 1982 | A0-1-EL-119 | Amendment reflecting the intent of the Board at the time it inserted Condition 5, paragraph (b) in the licence. |
| 8. The New Brunswick Electric Power Commission | EL-140 | 7 Oct. 1982 | A0-1-EL-140 | Amendment defining the period of time during which the maximum authorized quantity could be exported. |
| 9. Dow Chemical of Canada, Limited | EL-121 | 4 Nov. 1982 | A0-1-EL-121 | Amendment, which provides for an eighteen-month extension of the licence term to 30 June 1984. |

E-V

EXPORTS OF ELECTRIC ENERGY — CALENDAR YEAR 1982

E-V (cont'd)

EXPORTS OF ELECTRIC ENERGY — CALENDAR YEAR 1982

| EXPORTER | LICENCE NUMBER | MEGAWATT HOURS | | | | | REPORTED DOLLAR VALUE OF EXPORT | |
|--|--|--|---|--|--|---|---|--|
| | | LICENCE AUTHORIZATION | | GROSS ENERGY EXPORTED | | | | |
| | | FIRM | INTER-RUPTIBLE | FIRM | INTER-RUPTIBLE | EXCHANGE ⁽¹⁾ | FIRM | INTER-RUPTIBLE |
| 11. St. Lawrence Power Company | EL-114 EL-115 EL-116 | — — — | 250 000 150 000 150 000 | — — — | — 66 790 — | 117 710 — 3 275 | — — — | 1 998 539 — — |
| 12. Dow Chemical of Canada Limited | AO-1-EL-121 | — | 438 000 | — | 18 747 | — | — — — | 862 150 — — |
| TOTAL ONTARIO | | | | 1 200 916 | 9 935 980 | 31 167 | 52 855 174 | 377 279 127 |
| 13. Manitoba Hydro | EL-97 EL-98 EL-99 EL-100 EL-101 EL-102 EL-103 ELO-153 and ELO-172 | — 876 000 262 800 800 000 2 500 000 5 000 000 — 7 899 | 1 500 000 — — — — — 12 000 000 ⁽¹⁰⁾ — | — 236 020 262 800 — — — 260 1 794 | 1 828 920 — — — — — 2 887 524 — | — — — — — 37 595 — | — 6 215 626 3 593 412 — — 104 731 — 39 315 | 24 341 521 — — — — — 42 899 023 — |
| TOTAL MANITOBA | | | | 500 874 | 4 716 444 | 37 595 | 9 953 084 | 67 240 544 |
| 14. Saskatchewan Power | EL-117 EL-119 EL-120 | 438 000 — 876 000 ⁽¹¹⁾ | — 876 000 ⁽¹¹⁾ — | 33 200 — — | — 9 065 — | — 17 335 — | 1 489 420 — — | — 78 443 — |
| TOTAL SASKATCHEWAN | | | | 33 200 | 9 065 | 17 335 | 1 489 420 | 78 443 |
| 15. British Columbia Hydro and Power Authority | EL-126 EL-127 EL-128 EL-129 EL-130 ELO-168 | 32 000 2 000 000 3 000 000 — — 600 | — — — 525 600 10 000 00 ⁽¹²⁾ — | 13 493 — — — 525 600 4 313 802 323 | — — — — — — | — 980 589 — — 121 118 — — | 474 025 — — — — 44 909 — | — — — 10 434 566 128 431 566 — |
| 16. Cominco Ltd. | EL-20 EL-104 EL-105 | — 50 000 — | 500 000 — 1 400 000 | — — — | — — 210 993 | — — 5 673 | — — — | — — 5 423 912 |
| 17. West Kootenay Power and Light Company | ELO-157 | 50 | — | 28 | — | — | 1 017 | — |
| TOTAL BRITISH COLUMBIA | | | | 13 844 | 5 050 395 | 1 107 380 | 519 951 | 144 290 044 |
| TOTAL CANADA | | | | 5 828 772 | 27 156 899 | 1 234 047 | 242 320 683 | 863 582 090 |

(1) Exchange is no value energy. It includes inadvertent and circulating flows, equichange, storage adjustment transfer and wheeling or carrier transfer.

(2) Total exports under Licences EL-64 and EL-65 should not exceed 4 380 GW.h.

(3) Licence EL-65 expired 3 September 1982 and was replaced by Licence EL-140.

(4) Licence EL-66 expired 3 September 1982 and was replaced by Licence EL-141.

(5) Total exports should not exceed 6 482.4 GW.h when combined with the amounts exported under Licences EL-64, EL-137 and EL-138.

(6) Total exports should not exceed 10 200 GW.h when combined with the amount exported under Licence EL-96.

(7) Total exports should not exceed 525 GW.h when combined with the amount exported under Licence EL-132.

(8) Total exports should not exceed 20 000 GW.h when combined with the amount exported under Licence EL-135.

(9) Total exports should not exceed 380 GW.h when combined with the amount exported under Licence EL-124.

(10) Total exports should not exceed 12 000 GW.h when combined with the amounts exported under Licences EL-97, EL-98, EL-99, EL-100, EL-101 and EL-102.

(11) Total exports under Licences EL-119 and EL-120 should not exceed 876 GW.h.

(12) Total exports should not exceed 10 000 GW.h during the water year (1 October to 30 September) when combined with the amounts exported under Licences EL-128 and EL-129.

E-VI

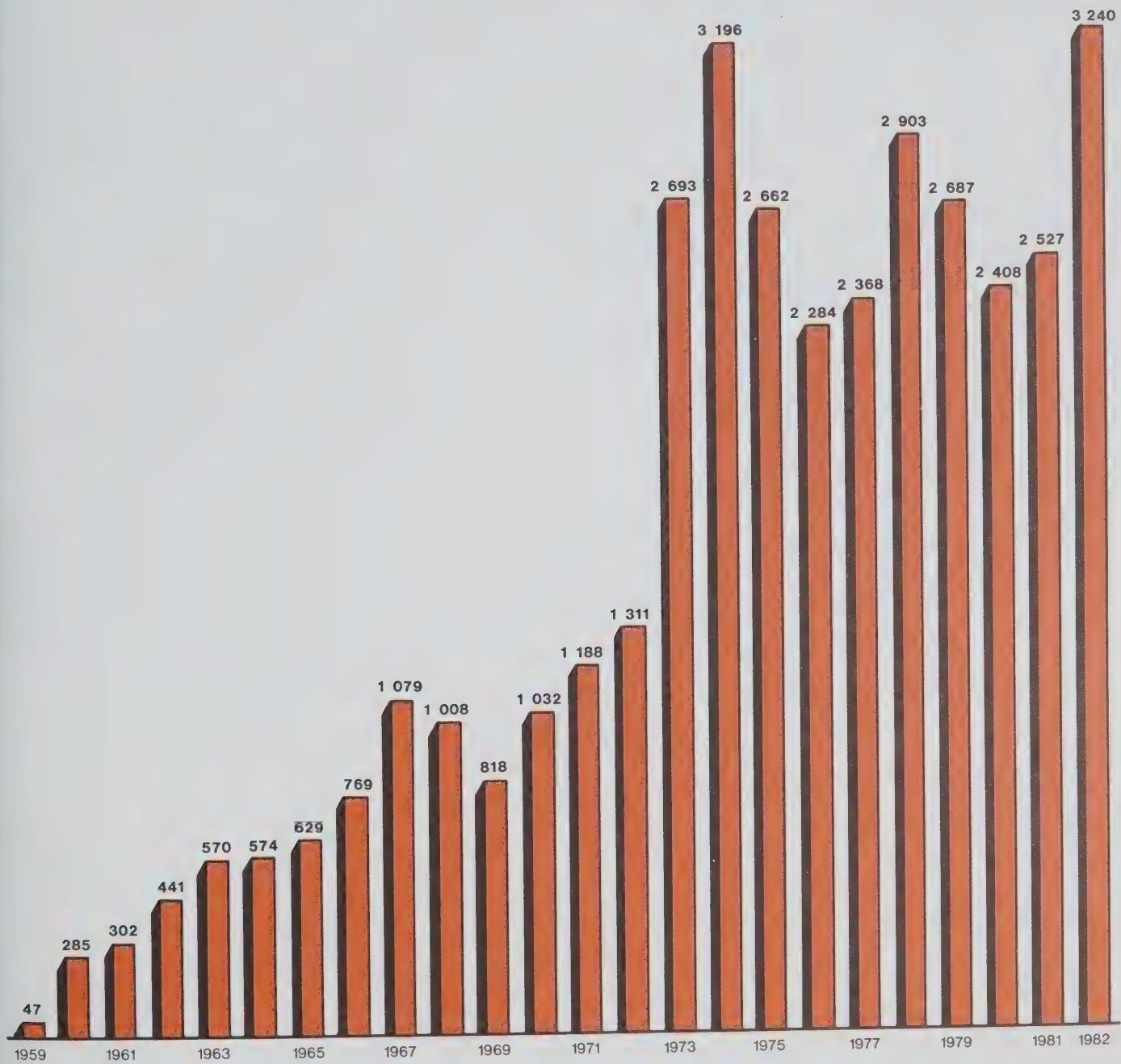
TOTAL CANADIAN ELECTRIC ENERGY SUPPLY AND TRADE WITH THE UNITED STATES — CALENDAR YEAR 1982

| CATEGORY | GIGAWATT HOURS | |
|--|----------------|---|
| Electric Energy Generation for all Canada | 375 400 | (preliminary) |
| Electric Energy Importation from U.S.A. | 2 849 | " |
| Total Canadian Electric Energy Supply | 378 249 | " |
| Electric Energy Export (Gross) to U.S.A. | 5 829 | (firm) 1.6% of Canadian supply |
| | 27 157 | (interruptible) 7.2% of Canadian supply |
| | 1 234 | (exchange) 0.3% of Canadian supply |
| Total Electric Energy made available in Canada | 344 029 | (preliminary) |

S-I

**TOTAL NUMBER OF BOARD CERTIFICATES, LICENCES, PERMITS,
ORDERS AND AUTHORIZATIONS BETWEEN 1959 AND 1982.**

The National Energy Board Act was proclaimed on November 2, 1959.



Canada

41
76
55

National Energy Board

1983 Annual Report



ERRATA
NATIONAL ENERGY BOARD
1983 ANNUAL REPORT

Page 15, Column 3,
Second Last Line:

For: Which arose from undertaken as an inquiry at
the request of the Minister of Indian and Northern
Affairs.

Read: Which arose from an inquiry undertaken at the
request of the Minister of Indian and Northern
Affairs.

Page 53, Column 3,
Line 1:

For: Invoked

Read: Revoked

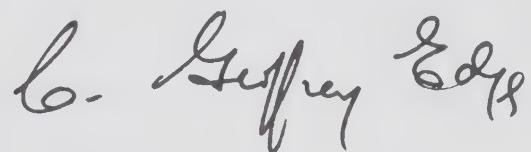
25 March 1983

The Honourable Jean Chrétien, P.C.,
Minister of Energy, Mines and Resources,
Ottawa, Ontario.

Dear Sir:

In accordance with the provisions of Section 91 of the National Energy Board Act, the Revised Statutes of Canada, 1970, chapter N-6, I am pleased to submit the Annual Report of the National Energy Board for the year ended 31 December 1983.

Yours sincerely,



C. Geoffrey Edge,
Chairman

PHOTO - CREDIT: COURTESY OF TRANS QUÉBEC & MARITIMES PIPELINE INC.

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Metric Conversion Table

The National Energy Board uses the International System of Units (SI). The following conversion table is provided for the convenience of any readers who may be more familiar with the Imperial System.

Approximate Conversion Factor

| | |
|-------------------------|--|
| 1 meter (m) | = 3.28 feet |
| 1 kilometre (km) | = 0.62 miles |
| 1 millimetre (mm) | = 0.039 inches |
| 1 cubic metre (m^3) | = 6.3 barrels |
| 1 cubic metre (m^3) | = 35.3 cubic feet |
| 1 litre (L) | = 0.22 gallons |
| 1 kilogram (kg) | = 2.22 pounds |
| 1 gigajoule (GJ) | = 0.95 MMBtu (950 cubic feet at 1000 Btu/cf) |
| GJ = gigajoule | = 10^9 J |
| TJ = terajoule | = 10^{12} J |
| PJ = petajoule | = 10^{15} J |
| EJ = exajoule | = 10^{18} J |

Report of the Chairman

The year 1983 has been one of change and transition in the energy industry. There has been a pause in the development of domestic and export markets, which have had to adjust to difficult and uncertain economic conditions at home and abroad.

The dramatic rise in world oil prices during 1979 and 1980 gave added impetus to the development of mega projects, and played a major part in precipitating the soaring inflation and interest rates of 1981 and the ensuing deep recession from which the North American economy is only now recovering. The result has been that demand for energy products weakened, due in part to conservation and a slow-down in the economy, and in 1983 world oil prices dropped significantly in both real and nominal terms. Many ambitious programs and projects based on anticipated further increases in world oil prices fell by the wayside and others were suspended, in large part as a result of these developments.

At this time last year, the deepening recession was contributing to a marked decline in the demand for petroleum products and, in turn, increasing the problem of shut-in domestic oil. The Board, being aware of the impact of these developments, took additional steps in 1983 to alleviate the situation by allowing, on a temporary basis, the export of significant volumes of light and medium crude oil for the first time in several years.

The increasing turmoil experienced in U.S. markets during 1983 as a result of the sharp decline in demand adversely affected Canadian gas exports. The decline in demand in

the U.S. resulted from a variety of factors - the economic recession, exceptionally warm weather during the winter months, conservation and heavy competition from alternative energy sources.

In response to these market pressures, the Canadian government undertook a significant reduction in the base price for gas exports to the United States and initiated a new incentive pricing scheme. A number of Canadian exporters also agreed, subject to the approval of Canadian and United States regulatory authorities, to a temporary relaxation of the requirements imposed on U.S. shippers to take or pay for gas.

By the year end, possible Congressional action involving both domestic and imported supplies of natural gas was still under consideration and an announcement was expected from U.S. regulatory authorities on the revised policy they planned to apply in considering new gas import applications. In consequence, U.S. regulatory agencies did not deal with import authorizations for the 9.8 exajoules of new exports licensed by the Board in January, 1983.

Worldwide uncertainty with respect to energy prospects generally had an impact in a variety of ways on matters before the Board. For example, the hearing on the Arctic Pilot Project was adjourned to provide its sponsors with an opportunity to investigate prospective markets in Europe for Canadian LNG.

There were, however, some encouraging signs on the energy scene. In terms of international trade, a favourable balance of payments was recorded from a

surplus for crude oil and products of \$2.2 billion, gas of \$3.9 billion and electricity of \$1.2 billion, for a total of \$7.3 billion. The favourable balance of trade in crude oil is not, however, likely to continue should improved economic conditions result in a revived growth in demand in this country. Plans for reviving certain enhanced oil recovery projects on a reduced scale also emerged in response to the reduction of royalty and tax levies imposed by federal and provincial governments. In addition, projects were launched on a reduced scale for the further development of oil from the tar sands.

A downward revision in the demand for electricity in Canada has resulted in a surplus of hydro-electric generating capacity which had been planned in earlier years on the basis of anticipated higher growth rates. This is providing immediate new opportunities for exports, and longer-term contracts for exports of firm electricity from hydro and nuclear-powered plants are being considered. The Board is planning for further major hearings in 1984 on additional exports of power and energy from British Columbia, Manitoba, Quebec and New Brunswick.

Despite some delays in the progress of major energy projects, the Board was intensely busy in the past year. With the fulfillment of the socio-economic and environmental terms and conditions previously laid down, final approval was given to construction of the Interprovincial oil pipeline from Norman Wells in the N.W.T. to Zama, Alberta. Hearings were held on an application from Hydro-Québec for approval of the long-term

export of a substantial amount of power to New York State. Hearings were concluded on the tolls and tariffs of a number of major pipeline companies including Trans Mountain, TransCanada, Trans Québec & Maritimes, Westcoast and Interprovincial Pipe Line, with decisions having been handed down on all but the last. At the request of the Minister of Indian and Northern Affairs, the Board conducted a major study into a number of different aspects of the role and operation of the Crown-owned Northern Canada Power Commission.

During 1983, the Board initiated a major review of its regulations related to the information required in applications filed with the Board, its Rules of Practice and Procedure, and the regulations for the safety and design of pipelines.

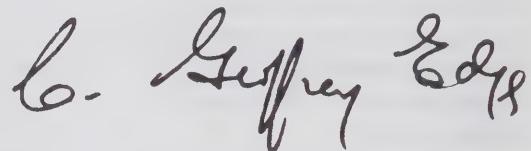
In addition, it has been working closely with representatives of industry and the Canada Oil and Gas Lands Administration in developing new regulations to govern offshore pipeline construction and operation. All told, the Board has been engaged in more than 25 studies to update, simplify and clarify its rules and regulations with the aim of reducing the regulatory burden.

Further changes were also still under consideration with respect to recommendations made in the Task Force on Pipe Line Construction Costs, which was established by the Minister of Energy in response to an earlier study by the Board's staff. And, finally, a new staff study was launched for the purpose of updating the Board's 1981 forecast of Energy Supply and Demand to the Year 2000 to take

account of new conditions and circumstances.

Among other major initiatives undertaken by the Board in 1983 was an expansion of its public communications program. The Board continued to issue a comprehensive quarterly report on the status of its regulatory activities and started publishing Information Bulletins on a wide variety of the Board's functions and activities to encourage a greater participation, understanding and awareness among public interest groups and industry affected by its decisions.

As we enter into 1984, which marks a special anniversary for the Board, established twenty-five years ago in the fall of 1959, we can look back on a history of important achievements and a future of promising developments on the energy scene in Canada.



C. Geoffrey Edge

Members of the National Energy Board

| | |
|--------------------------|---|
| Chairman: | C. Geoffrey Edge |
| Vice-Chairman: | R.F. Brooks |
| Associate Vice-Chairmen: | L.M. Thur W.A. Scotland* |
| | J. Farmer |
| | A.D. Hunt |
| Members: | J.R. Jenkins J.R. Hardie J.L. Trudel R.B. Horner, Q.C. A.B. Gilmour W.G. Stewart** E.S. Bell*** |

Change in Membership

**The Governor in Council appointed Mr. W.G. Stewart as a Member of the Board effective 24 March 1983. A former President and Chief Executive Officer of Union Gas Limited, Mr. Stewart was Senior Advisor, Corporate Affairs, with Richardson Greenshields of Canada Limited prior to his appointment.

***The Governor in Council also appointed Mr. E.S. Bell as a temporary Member of the Board from 1 April 1983 to 31 August 1983 to act as one of the panel members who conducted the Inquiry into the Northern Canada Power Commission.

* Mr. Scotland is the Board's Designated Officer with the Northern Pipeline Agency and is based in Calgary.

Functions and Responsibilities of the National Energy Board

Under the National Energy Board Act of 1959 and subsequent amendments, the Board has two principal responsibilities:

- to regulate specific areas of the oil, gas and electrical utility industries in the public interest, and
- to advise the Government on the development and use of energy resources.

The Board on its own initiative may hold *inquiries* into a particular aspect of the energy situation and prepare reports for the information of the Government, of Parliament and of the general public.

The Board also carries out *studies* and prepares *reports* at the request of the Minister.

The regulatory role of the Board encompasses the following fields:

Certificates of Public Convenience and Necessity for Pipelines and Power Lines

The Board grants certificates to construct and operate interprovincial and international oil, gas and petroleum products pipelines, and international electric power lines¹. Before a certificate is issued, the Board is required to consider the application at a public hearing.

Export Licences and Orders

The National Energy Board Act requires the Board, in considering applications for exports, to take

into consideration all matters that appear to it to be relevant. It must, among other things, satisfy itself that the quantities of energy involved do not exceed the surplus remaining after allowance has been made for reasonably foreseeable Canadian requirements for that particular form of energy. In addition, where oil or gas is to be exported and subsequently imported, or in the case of an import of oil or gas, the Board must have regard for the equitable distribution of oil or gas in Canada. Furthermore, the Board may be given the power, in effect, to allocate supplies of oil or gas between regions of the country, e.g., during periods of tight supply other than times of national emergency.

Regulation of Pipeline Tolls, Tariffs and Accounting Practices

The Board regulates the tolls and tariffs of pipeline companies under federal jurisdiction to ensure that the tolls are just and reasonable and to ensure that they are not unjustly discriminatory. The approved tolls or tariffs reflect, among other things, the capital and operating costs of a pipeline company and the necessity for it to earn an adequate return on its investment so as to be able to attract capital as needed to maintain and extend service. The Board has established uniform accounting classifications and practices that it requires oil and gas pipeline companies under its jurisdiction to use.

Pipeline and Power Line Orders

The Board may issue orders approving minor additions or

modifications to existing pipeline systems without calling a public hearing. Such additions and modifications are restricted to sections, branches and extensions of pipelines not more than 40 kilometres in length, and ancillary installations such as tanks, pumps, compressors, meter stations, and communications systems. The Board may also by order authorize the construction and operation of international power lines of voltage not exceeding 50 kilovolts.

Pipeline Safety

The Board's Oil and Gas Pipeline Regulations provide for the safe design, construction and operation of pipelines under Board jurisdiction. Commencing with the design stage, applications for pipeline construction are reviewed to ensure compliance with the regulations. Pipeline companies are required to have contingency plans developed in coordination with local authorities to provide for the safety of the public in the event of line breaks during testing or operation. To ensure high standards in the safety of pipeline construction and operation, the Board carries out inspection programs and conducts investigations and reviews of pipeline system performance.

Pipeline Utility Crossing Orders

For reasons of safety, the protection of the environment, and the existence of other utility services, no pipeline may cross or be crossed by another utility without authorization. Where a pipeline is to cross a navigable water or a railway, leave must be obtained from the Minister of Transport or the Canadian

¹ Under an amendment passed in 1983, the relevant provisions of the NEB Act may, by order of the Governor in Council, be extended to designated interprovincial power lines.

Transport Commission, respectively. Crossings of the facilities of other utilities may only be made with the authorization of the Board after consideration of all the relevant information.

Environmental Protection

The environmental information requirements for new oil and gas pipelines and for modifications or extensions to existing systems and for international power lines are set forth in the Board's Rules of Practice and Procedure. The Board takes into consideration the environmental impact of the construction and operation of oil pipelines, gas pipelines and international power lines. The Board considers such diverse concerns as impact on permafrost soils, erosion and siltation at water crossings, impact on wildlife and fish, preservation of archaeological sites, air emissions, noise, and protection of agricultural soils.

Socio-Economic Impact

The Board has issued guidelines for the preparation of regional socio-economic impact assessments of gas or oil pipeline projects. In assessing the types of impacts that could be generated by a proposal, the Board has regard to an applicant's policies and practices in order to promote the positive and mitigate the negative regional socio-economic impacts of the project. The Board monitors socio-economic actions plans, conducts investigations and reviews pipeline company performance where warranted.

Canadian Content

The Board, in making decisions, has regard to the extent to which Canadians have full and fair opportunities to participate in the financing, engineering and construction of facilities.

Responsibilities Under the Energy Administration Act

The Board is required to administer certain provisions of the Energy Administration Act (formerly the Petroleum Administration Act), namely, the imposition and collection of a charge on the export of crude oil and certain petroleum products and the administration of the price of natural gas in interprovincial and export trade.

Responsibilities Under the Northern Pipeline Act

The Northern Pipeline Act, passed on 12 April 1978, provides authority for the construction in Canada of the Alaska Highway Natural Gas Pipeline as well as for the creation of the Northern Pipeline Agency to oversee the construction of the pipeline. Certain terms and conditions in the legislation require the company to seek various authorizations from the Board, from the Minister of Energy, Mines and Resources, and from the Minister responsible for the Northern Pipeline Agency. The Board's responsibilities relate mainly to financing and tariffs, approval of pipe specifications, granting of leave to open orders, and regulation of the operation of the line.

Public Access and Participation

The Board is a Court of Record. Hearings before the Board are public and the applicant and interested persons have full rights of participation. The Board gives parties reasonable notice of the matters at issue in a proceeding together with a fair opportunity to address any concerns or questions that the Board may have. The Board achieves this through the giving of public notice, by addressing written requests for information to parties, and through cross-examination.

The record of a proceeding is public. The record consists of the application, interventions, information requests and responses to them, exhibits, oral testimony (which is transcribed), submissions or argument of parties, related orders and decisions of the Board, correspondence exchanged between parties and the Board, and other material filed in the proceeding. The only exception is when an applicant claims price or other contract conditions to be confidential for reasons of competition, in which case the Board may maintain that confidentiality for a very limited period of time.

Decisions of the Board are made in the public interest. The general public can obtain access to the record of a Board proceeding through the Board's Library or its Information Services. The Board's Reasons for Decisions on hearing applications are issued as public documents, and all of its decisions are, of course, also publicly available.

The Board publishes quarterly Regulatory Agendas, which

provide advance notice of forthcoming regulatory actions and information on the status of ongoing proceedings. During 1983, the Board also began to publish Information Bulletins on its activities and procedures.

Implementation of Board Decisions

When, after a public hearing, the Board is prepared to grant a certificate for a pipeline or a power line or to issue a licence for the export of natural gas or electricity, the import of natural gas, or the export of oil for a period exceeding one year, it so reports to the Governor in Council through the Minister of Energy, Mines and Resources. If the issuance of a certificate is approved by the Governor in Council, the certificate is then issued by the Board. In the case of export or import applications, licences issued by the Board go into effect on approval by the Governor in Council. A decision of the Board to refuse an application is not subject to referral to the Governor in Council.

Because of the special nature of the trade in crude oil and petroleum products, specifically the use of short-term contracts and the need to make decisions on a daily basis, oil export controls (except for licences for periods in excess of one year)¹ are exercised directly by the Board without reference to the Governor in Council.

¹ The Board may also issue, without a public hearing and without recourse to the Governor in Council, a licence for more than a year, for the export of oil products produced under an agreement to process imported crude oil.

Applications for orders authorizing the export of relatively small quantities of ethane, propane, butanes, and ethylene, for periods up to one year, a maximum of three billion cubic metres of natural gas in any one year for a period not exceeding two years, and small amounts of electricity for up to three years may also be dealt with by the Board without reference to the Governor in Council.

Decisions on rates, tolls, and tariffs are made by the Board without reference to the Governor in Council.

Appeals of Board Decisions

With regard to attendance, the swearing and examination of witnesses, the production and inspection of documents, and the enforcement of its orders, the Board has all the powers vested in a superior court of record.

Under section 17(1) of the National Energy Board Act, the Board may review, rescind or change any order or decision made by it, or may re-hear any application before deciding it. Under section 17(2) of the Act, the Board may change a certificate or licence issued by it, but no such change is effective until approved by the Governor in Council. Parties may apply to the Board, pursuant to these sections of the Act, requesting the Board to review an order or decision, or to amend a licence or certificate.

A decision or order of the Board may be appealed to the Federal Court of Appeal providing the appeal is based upon a point of law or jurisdiction. Leave to appeal must be obtained upon application made within one month after the making of the Board's decision or

order, or within such further times as that Court may allow. Judgments of the Federal Court of Appeal may, with leave, be appealed to the Supreme Court of Canada. The Federal Court of Appeal also has jurisdiction to review and set aside a decision or order of the National Energy Board upon certain stipulated grounds.

The Trial Division of the Federal Court of Canada has exclusive jurisdiction to issue an injunction, writ of certiorari, writ of prohibition, writ of mandamus, writ of quo warranto or grant declaratory relief against any federal board, commission or other tribunal.

Awarding of Costs

The National Energy Board Act does not empower the Board to award costs to participants at its proceedings, except in the specific case of hearings on the concerns of landowners over the specific route of a pipeline or power line. Such hearings are held under Section 29.2(3) of the Act.

STANDING PANELS AND COMMITTEES

The Board assigns much of its ongoing regulatory workload to five standing panels, each composed of a quorum of three Board Members. In addition, certain Board Members and senior staff are involved in the work of seven committees, two of which deal exclusively with issues affecting the internal management of the Board.

STANDING PANELS

In exercising their delegated powers and duties, the Panels

refer to the whole Board any matters that raise questions of general policy, may have important ramifications for the industries under the Board's jurisdiction, require consideration as to the desirability of a public hearing, or otherwise raise issues considered by the Panel to be of importance to the Board as a whole. Except as noted below, Panels do not issue or amend certificates or licences, or decide matters which would require the holding of a public hearing.

| PANEL | MEMBERS | RESPONSIBILITIES |
|----------------------|--|---|
| Oil | J.R. Hardie* J.R. Jenkins R.B. Horner J.L. Trudel** | To exercise the powers of the Board under Parts I and I.1 of the Energy Administration Act pertaining to the export charge on crude oil, oil products, and oil used as fuel in international transportation. The Panel issues licences for the export of oil and oil products for a period of up to one year***, issues orders for the interprovincial movement and allocation of western Canadian crude oil and for exchanges, issues licences for the import of heavy fuel oil into Canada, and advises the Minister respecting oil-related energy matters. |
| Gas | L.M. Thur* R.B. Horner A.B. Gilmour J. Farmer** | To exercise the powers of the Board in matters relating to natural gas, liquefied natural gas, synthetic natural gas, propane, butanes, ethane, and ethylene. In addition, the Panel advises the Minister under section 22 of the Act respecting the export price of natural gas. |
| Electrical | R.F. Brooks* A.D. Hunt J.L. Trudel W.G. Stewart** | To exercise the powers of the Board in all matters relating to electricity. |
| Pipeline | J. Farmer* J.R. Jenkins A.B. Gilmour W.G. Stewart** | To exercise the powers of the Board in matters relating to the construction, operation, and maintenance of oil and gas pipelines, including pipeline safety and environmental considerations. |
| Financial Regulatory | A.D. Hunt* J.R. Hardie W.G. Stewart R.B. Horner** | To exercise the powers of the Board with respect to tolls and tariffs charged by gas and oil pipeline companies under the Board's jurisdiction. |

* Panel Chairman

** Panel Alternate

*** The Panel may issue a licence for more than a year, without a public hearing, for the export of oil products produced under an agreement to process imported crude oil.

Note: The Chairman is an ex-officio member of all Panels and Committees.

COMMITTEES

The Board committees study and keep under review matters of interest that are outside the direct responsibilities of its various panels.

| COMMITTEE | MEMBERS | RESPONSIBILITIES |
|--|---|---|
| Executive | C.G. Edge* R.F. Brooks L.M. Thur J. Farmer A.D. Hunt R. St.G. Stephens | To deal with broad, long-term issues affecting the Board. |
| Internal Audit | C.G. Edge* R.F. Brooks L.M. Thur R. St.G. Stephens | To keep the Board's operations under review to ensure that they are administered efficiently, economically, and effectively. |
| Regulatory Process | R.F. Brooks* L.M. Thur G. Yorke Slader F.H. Lamar | To study and keep under review all aspects of the regulatory process and recommend to the Board measures designed to improve the efficiency and effectiveness of regulation. |
| Energy Studies | C.G. Edge* R.F. Brooks L.M. Thur A.D. Hunt K.W. Vollman | To initiate and review studies on any aspect of energy which may be of interest to the Board and which is outside the orbit of other panels and committees. |
| Regulation of Pipelines (Tariffs) | C.G. Edge* J. Farmer A.D. Hunt J.R. Hardie W.G. Stewart | To deal with broad issues arising from the Board's regulatory responsibilities under Part IV of the NEB Act. |
| Regulation of Pipelines (Construction) | C.G. Edge* L.M. Thur J. Farmer A.D. Hunt J.R. Jenkins A.B. Gilmour T.S. Shwed | To deal with Board issues arising from the Board's regulatory responsibilities under Part III of the NEB Act. |
| Northern Canada Power Commission | C.G. Edge* J.R. Hardie E.S. Bell | To deal with matters arising from the Board's report of August, 1983, on the Northern Canada Power Commission, which arose from undertaken as an inquiry at the request of the Minister of Indian and Northern Affairs. |

* Committee Chairman

Public Hearings and Inquiries

During 1983, the Board conducted all or part of 14 public hearings and inquiries in locations from Vancouver, British Columbia to Fredericton, New Brunswick, and in northern Canada, comprising a total of 143 hearing days.

The following summarizes the major decisions rendered in 1983 following public hearings.

NATURAL GAS EXPORTS

Gas Export Omnibus Hearing

As reported in last year's Annual report, on 27 January 1983, the Board released its decision in Phases II and III of the Gas Export Omnibus Hearing, which had concluded late in 1982.

This hearing was held to consider a number of competing applications for licences to export natural gas or orders varying existing licences.

Phase I was held to consider whether any changes should be made to the conditions of existing natural gas export licences and whether the protection procedures for volumes already licensed should be changed. The Board also reviewed the procedure it used to determine the availability of surplus natural gas for export.

In Phase II, the Board examined the economic, contractual, regulatory, and other aspects of the individual applications to export natural gas. Also it had examined the markets for Canadian gas in the United States and Canada.

During Phase III, the Board heard evidence on natural gas demand, supply, and surplus available for export.

The following table provides a summary of the quantities applied for and those granted by the Board

(exports to the United States are ranked according to the amount granted):

| | SUMMARY OF EXPORTS (exajoules) | |
|---|-----------------------------------|-------------|
| | Applied for | Granted |
| Exports to United States | | |
| TransCanada PipeLines Limited | 6.5 | 3.0 |
| Pan-Alberta Gas Ltd. | 4.6 | 2.2 |
| Alberta & Southern Gas Co. Ltd. | 4.9 | 1.4 |
| ProGas Limited | 2.2 | 1.1 |
| Westcoast Transmission Company Limited | 2.6 | 0.9 |
| KannGaz Producers Ltd. | 0.7 | 0.5 |
| Consolidated Natural Gas Limited | 0.2 | 0.2 |
| Sulpetro | 0.2 | 0.2 |
| Columbia Gas Development of Canada Ltd. | 0.2 | 0.1 |
| Canadian-Montana Pipeline Company | 0.5 | 0.1 |
| Niagara Gas Transmission Limited | 0.1 | 0.1 |
| Ocelot Industries Ltd. | 0.6 | Nil |
| Sub-Total Exports to U.S. | 23.4* | 9.8 |
| Export to Japan (LNG) | | |
| Dome Petroleum Limited | 3.1 | 2.4 |
| Total Exports | 26.5 | 12.2 |

NOTE: *Column adds to 23.4 because of rounding.

In its decision, the Board authorized the export of an additional 12.2 exajoules (11.5 trillion cubic feet) of Western Canadian natural gas. This was less than half the 26.5 exajoules requested by the 13 applicant companies.

Dome Petroleum Limited was granted a licence to ship 2.4 exajoules of LNG (liquefied natural gas) to Japan in the period 1986 to 2001. This marks Canada's first licence for the export of natural gas to Japan.

The remaining 9.8 exajoules were for export to existing and new markets in the United States, mainly in the period 1985 to 1994.

The new licences for 12.2 exajoules are in addition to the 12 exajoules remaining to be exported under previously-issued

licences. The latter quantity includes the last major exports authorized, in November 1979, when licences for 4.1 exajoules were issued.

In its decision, the Board also denied two applications: an application by Ocelot Industries Limited to export natural gas of Saskatchewan origin to the U.S. and an application by ProGas Limited to export gas to California.

In addition, the Board approved an application by Union Gas to continue exporting synthetic natural gas to the U.S., and issued a licence to Transco for the movement of natural gas into and out of Canada. This was simply to facilitate transportation and involved no net export.

In deciding if these exports would be in the Canadian public interest, the Board compared the benefits that could be derived from exporting the gas with those that could result from keeping the gas in the ground for use in Canada at a later date. The conclusion was that Canada would derive a net benefit of \$17 billion from new exports of natural gas.

Furthermore, at the then-current export price of just under \$6 per gigajoule (U.S. \$4.94 per MMBtu), the new exports were anticipated to contribute some \$70 billion to Canada's balance of payments over the life of the licences.

The Board examined the opportunities for Canadian gas in American and Japanese markets and found that both countries offered long-term and valuable markets for Canadian gas. The Board made sure that existing markets in the United States would continue to be supplied for the next 10 years by extending existing licences when they expire, and assured new markets

requiring new pipeline facilities a 12-year supply to support the financing of pipeline costs.

The Board felt that two markets required special analysis: the Northeastern United States market and the market for LNG in Japan. The Board found the United States Northeast to be an attractive long-term growth market, but was concerned with the cost of constructing new pipeline facilities. The pipeline facilities would be required to transport the gas the 3 000 kilometres from Alberta. The Board was of the view that, although some of the new pipeline facilities could be used later to carry gas to Canadian markets, a factor weighing against major exports of western gas to the United States Northeast was that, in the long run, part of this market could be supplied with gas from the Sable Island area and other frontier sources of gas.

The Board believed that the export of LNG to Japan represented a major opportunity to diversify the export market for Canadian gas. As the price of the gas to that market would be tied to that of crude oil, the economic attractiveness of the project was, therefore, dependent on the future of world crude oil prices. Although the Japanese sales contract is for 20 years, the Board was only prepared to issue a firm licence for 15 years. The Board did, however, earmark sufficient reserves from the unallocated surplus for a further 5-year licence for Dome if circumstances warrant it.

It is notable that the Board included, as a condition of each licence granted, that the licence-holder have all necessary arrangements and approvals in place by 31 January 1984.¹ These

include authorizations from American authorities to import the gas or to construct new facilities in the United States, as well as provincial removal permits and further authorizations from the Board for additional facilities, and the completion of contractual and financial arrangements.

ELECTRIC POWER EXPORTS

Hydro-Québec

In September and October 1983, the Board held a public hearing on an application by Hydro-Québec for licences to export power and energy to the Power Authority of the State of New York (PASNY) and to Niagara Mohawk Power Corporation. The Board will be releasing its Reasons for Decision in early 1984.

The New Brunswick Electric Power Commission

In August, the Board issued its Reasons for Decision on an application by The New Brunswick Electric Power Commission for the sale of 25 megawatts of electric power from the Point Lepreau nuclear generating station to certain utilities in New England under existing licences and the amendment of three existing agreements for the sale of 205 megawatts.

The application was the subject of a public hearing conducted in Fredericton, New Brunswick in July, 1983.

The main elements of the Board's decision were as follows:

- the Board approved the agreement for the sale of 25 megawatts to Commonwealth Electric Company;
- the Board approved amendments to three Point Lepreau Unit Participation Agreements with Massachusetts Municipal Wholesale Electric Company, Boston Edison Company and Eastern Main Electric Cooperative, Incorporated; and
- the Board amended two existing export licences to extend their term by one year to 31 October 1991.

TOLLS AND TARIFFS

TransCanada PipeLines Limited

Following a public hearing in May and June, the Board in July released its decision on an application by TransCanada PipeLines Limited to increase the tolls it charges for the transportation of natural gas throughout its system from Saskatchewan to Quebec, effective 1 August 1983.

TransCanada's new toll for the transportation of natural gas to Eastern Canada increased to 93.7 cents per gigajoule on 1 August 1983, an increase of 5.5 percent. Elsewhere, the increase was in the order of 3.0 to 4.0 percent.

The new tolls reflected a 14.0 percent rate of return calculated on a rate base of \$2.6 billion. This compares with a previously authorized rate of return of 13.88 percent on a rate base of \$2.4 billion. The approved rate of return reflected an embedded cost

¹ The Board subsequently approved an extension to 31 January 1985 for most of the licences.

of debt of 14.36 percent, which was higher than the 13.65 percent previously authorized. The higher cost of debt was partially offset by a lower rate of return on common equity.

TransCanada was given the opportunity to earn a rate of return on equity of 15.0 percent compared with the 16.5 percent applied for and the 16.0 percent previously allowed. The reduction reflected the decline in interest and inflation rates.

The Board also decided to maintain the common equity ratio at the current level of 28.0 percent, compared with the 30.0 percent applied for.

TransCanada applied to recover an amount of \$8.4 million in sales revenue it would have received had the Governor in Council prescribed prices on 1 August 1982 instead of 1 September 1982. The Board denied the application because it would have constituted retroactive ratemaking.

TransCanada, in support of the government's 6 and 5 restraint program, undertook to limit increases in salaries to 6.0 percent in 1983 and 5.0 percent in 1984. Merit increases also complied with the government's guidelines. Furthermore, TransCanada applied for a deferral of the recovery of certain costs attributed to its North Bay Shortcut facilities to limit the increase in its tolls.

The Board accepted TransCanada's deferral concept, and allowed a deferral of \$45.6 million dollars. This deferral, together with the Board's decisions on other cost of service matters, had the effect of limiting the increase in the cost of transporting gas from Alberta to Eastern Canada, commencing

1 August 1983, to the 5.5 percent noted previously. The provision for a deferral will increase tolls to be charged in future years.

In addition, the Board considered the issue of the appropriate zoning for delivery points off TransCanada's North Bay Shortcut facilities, and included Mattawa and Haley Station in the eastern rate zone.

Westcoast Transmission Company Limited

In August, the Board released its Reasons for Decision on the tolls to be charged by Westcoast Transmission Company Limited for the transportation of natural gas in British Columbia. A public hearing was held in April and May to examine an application by Westcoast for, among other things, an increase in its rate of return on rate base. At the same time, the Board examined matters relating to Westcoast's operating and maintenance budget and cost-of-service toll.

In its Decision, the Board reduced Westcoast's estimated 1983 cost of service by approximately \$35 million, to \$279 million, 3.5 percent lower than the 1982 actual cost of service.

The reduction was due primarily to the Board's decision to change Westcoast from the normalized method of calculating income taxes to the flow-through method.¹ It was also due to the

decision, on an interim basis, to transfer the capital expenditures for the replacement program for the Grizzly Valley pipeline, currently under litigation, to a deferral account and to leave the costs associated with the original pipeline in rate base.

The Board approved a rate of return on equity of 14.75 percent, a reduction from the 15.0 percent approved in the 1980 Decision. However, as a result of increases in the cost of servicing Westcoast's long-term debt, the rate of return on rate base after income taxes was increased from 11.51 to 12.05 percent. The equity component of the capital structure remains unchanged at 35 percent.

The Board also approved, as part of the cost of service, an operating and maintenance expense budget for Westcoast of \$64.7 million. This was 5.7 percent more than Westcoast's actual expenses in 1982.

Westcoast is currently regulated on a variable cost of service toll, under which it charges customers the costs it actually incurs, up to an amount previously approved by the Board. The Board plans to hold a hearing, in the spring of 1984, to examine whether Westcoast should remain on this method of regulation or should be changed to a fixed-toll method. With a fixed toll, the Board would approve Westcoast's tolls in advance and these would not change as a result of variations in the company's actual cost of service.

1 Under the flow-through method, the Board approves tolls that provide for an allowance for income taxes based on the actual taxes payable, rather than an allowance based on accounting income.

Trans Québec & Maritimes Pipeline Inc. (TQM)

In June, the Board issued its Reasons for Decision on an application by Trans Québec &

Maritimes Pipeline Inc. for orders fixing the tolls for the transportation of natural gas on its pipeline, which runs from near Montreal to Quebec City.

This decision was issued following four months of public hearings from December 1982 to March 1983 - the first hearings to be held on the toll regulation of this new natural gas pipeline system in Quebec. The Board allowed TQM to charge a total of \$6.3 million per month in tolls, commencing 1 July 1983. The Board approved a total cost of service of \$37.8 million for the TQM pipeline and a rate of return of 12.9 percent on a rate base of \$391.4 million, for the six-month test period 1 July to 31 December 1983.

The hearing dealt with a wide range of toll-related matters, including the method of regulation, the form and content of the transportation tariff, the rate base, the rate of return on rate base, the method of calculating income taxes, and the desirability of tariff levelling.

The chief decisions in the Board's report were as follows:

- the Board approved a fixed monthly toll, commencing 1 July 1983, equivalent to one-sixth of the total cost of service for a six-month period. Charges to TransCanada PipeLines Limited were, upon approval by the Board, to be included in TransCanada's cost of service as a component of "Transmission by Others". Thus, TQM's toll forms an integral part of the tolls paid by TransCanada's customers.
 - the Board authorized a rate base of \$391.4 million, reducing the costs estimated by TQM by \$43.9 million.
 - the Board allowed a rate of return of 12.9 percent on rate base. This was based on a capital structure consisting of 75.0 percent debt and 25.0 percent equity, and rates on debt and equity capital of 12.0 and 15.6 percent, respectively.
 - the Board decided that the allowance for income taxes, to be included in TQM's tolls, should be calculated on a flow-through basis rather than on a normalized basis as proposed by the pipeline company. The use of the flow-through method resulted in the elimination of an allowance for income taxes of \$7.2 million during the test period.
 - the allowed cost of service of \$37.8 million for the six-month test period commencing 1 July 1983 consisted of the following:
- | | |
|-------------------------------|---------------|
| Operating and Maintenance | \$4.6 million |
| Depreciation and Amortization | \$6.6 million |
| Taxes other than Income Taxes | \$1.4 million |

Return on Rate Base \$25.2 million.

The Board accepted the amounts requested for wages and salaries, which were in conformity with the federal government's 6 and 5 restraint programme.

Trans Mountain Pipe Line Company Ltd.

In March, the Board issued an order fixing the tolls to be charged by Trans Mountain Pipe Line Company Ltd. for the transportation of crude oil, effective 1 April 1983. Trans Mountain owns and operates a pipeline system extending from Edmonton, Alberta to Burnaby, British Columbia.

By application dated 3 November 1982, Trans Mountain requested the Board to approve a cost of service of \$39.6 million for 1983, an increase of approximately 10 percent above the previously authorized cost of service. The Board allowed a cost of service of \$34.7 million, some 12 percent less than the requested cost of service, or 4 percent less than the previously authorized cost of service of \$36.1 million.

The throughputs of the Company have decreased significantly since 1981. They declined from a level of 26 000 cubic metres per day in early 1982 to an anticipated level of 19 400 cubic metres per day later in the year. As a consequence, the tolls derived from the cost of service authorized by the Board, expressed as dollars per cubic meter, increased from those previously approved.

A public hearing on the tolls charged by Trans Mountain was held in Vancouver, B.C. from 14 to 27 January 1983. The Board's

Reasons for Decision were published in March.

The Board allowed an after-tax rate of return of 14.38 percent on a rate base of \$30.57 million. The Board deemed a capital structure of 45.0 percent debt and 55.0 percent equity and allowed a cost of debt of 13.0 percent and a rate of return on equity of 15.5 percent.

In arriving at the approved tolls, the Board considered the components of the application in the light of the government's price restraint guidelines.

INQUIRIES

Heavy Fuel Oil Inquiry

In May, the Board concluded a public inquiry into the licensing of heavy fuel oil imports into and exports out of Eastern Canada.

In June, the Board released its report. Among its conclusions were:

- a continuing balance of domestic production of heavy fuel oil with demand cannot be achieved without the supply adjustments provided by exports and imports of that product;
- it is more cost-efficient to export surplus product from Ontario to the United States, where some markets have already been established, than to transport the product to the Atlantic provinces, even if a system of transportation subsidies were developed;
- the elimination of imports of heavy fuel oil into Eastern Canada in itself would not necessarily resolve the difficulties hampering natural gas penetration into the

- industrial market in Quebec;
- the import option provides essential price competition for independent marketers and for consumers in areas where natural gas is not an alternative energy source.
 - supply imbalances will likely occur during 1983 and 1984 as a result of refinery rationalization, and, therefore, allowances must be made for fluctuations in the supply of heavy fuel oil.

Northern Canada Power Commission Inquiry (NCPC)

In January, the Honourable John Munro, Minister of Indian and Northern Affairs, asked his colleague, the Minister of Energy, Mines and Resources, to request the Board to advise him on a number of aspects of the operations of the Northern Canada Power Commission. These included cost of service, rate design, general principles of ratemaking, and the regulation of the NCPC.

The NCPC, a federally-owned Crown corporation, generates, transmits, and distributes electricity from hydro and diesel plants in the Yukon and Northwest Territories.

The Board held a series of public hearings in June and July in nine communities in the two territories, and issued its report in October.

The main recommendations of the Board were as follows:

- the regulation of the NCPC, including the approval of rates and certificates of public convenience and necessity for major capital additions, should be delegated to a single federal agency;

- the rates should be established by the proposed federal regulatory agency following rate hearings with opportunity for participation by interested parties;
- to overcome the existing problem of inconsistent rate structures and to improve the efficiency of the regulatory process, a "duly appointed federal regulatory agency be given complete and final authority in establishing NCPC's annual revenue requirements for a given period, and in determining the cost-based rates associated therewith";
- NCPC's revenue requirement should be determined in accordance with the Commission's cost of service, as calculated by the rate base/rate of return method;
- NCPC rates should be based on the true costs of providing electricity to its customers in the North, with separate rate zones for areas supplied from hydro or diesel generation;
- NCPC should be permitted to operate as a public utility on a business-like basis, with any subsidization of electrical rates provided by the federal government independent of NCPC's operations;
- NCPC should continue to operate as a single entity owned by the federal government, with the head office remaining in Edmonton;
- some existing debt held by the federal government should be converted to equity;
- the proportion of debt that exists because of prior losses

and outstanding loans incurred in respect of assets no longer useful should be forgiven.

The Board recommended that all changes proposed in its report become effective 1 April 1985. This date was selected to provide sufficient time for completion of all steps necessary to implement a rate regulation scheme.

Inquiry Into Accident at Liebenthal Purchase Meter Station

In December 1983, the Board held a public inquiry in Leader, Saskatchewan, into an accident that occurred at the Liebenthal Purchase Meter Station, on the system of TransCanada PipeLines Limited in Saskatchewan, in which one TransCanada employee was killed and another injured. The Board will be releasing its Reasons for Decision in early 1984.

HEARINGS IN PROCESS, ADJOURNED OR PENDING¹

Arctic Pilot Project

In February of 1982, the Board had commenced a hearing on an application by Arctic Pilot Project Inc. for the construction of a natural gas pipeline and liquefaction plant on Melville Island in the Arctic, the transportation of the liquefied natural gas (LNG) in ice-breaking tankers to an eastern Canadian

port, where it would be regasified, and finally the export of the natural gas by displacement to the United States.

In late July 1982, the sponsors of the Arctic Pilot Project announced that they were investigating the possibility of selling the LNG to European markets as an alternative to the U.S. market. As a result, TransCanada PipeLines requested an indefinite adjournment of its application to construct the regasification terminal in Eastern Canada because an export to Europe would make the construction of the regasification facility unnecessary. The Board granted this request and on 31 August 1982 adjourned the entire proceeding.

In June 1983, the Board directed the project sponsors to submit their views by 1 December 1983 with respect to the future conduct of the Arctic Pilot Project proceedings and to address in particular whether the present status should be maintained or whether the proceedings should be discontinued. In their reply, the sponsors submitted that the present status of the proceedings should be maintained. The Board will consider this view together with any views submitted by interested parties.

The Western LNG Project — Dome Petroleum Limited and Westcoast Transmission Company Limited

In February 1983, following the release of the Board's decision on the Gas Export Omnibus Hearing, Dome Petroleum Limited applied for a certificate of public convenience and necessity to construct and operate the facilities for liquifying natural gas (LNG) for export to Japan under Dome's new



export licence. The facilities would be located near Grassy Point, British Columbia, approximately 28 kilometres from Prince Rupert.

In May, Westcoast Transmission Company Limited filed an application for a certificate to construct and operate pipeline facilities in Alberta and British Columbia for the transportation of natural gas produced in those provinces to Dome's proposed LNG facilities.

The Board decided to hold its hearing into Dome's application in phases.

Phase I began in Richmond, B.C., on 17 October 1983 and continued in Prince Rupert, B.C., on 1 November. The Richmond session was held to examine the description of the proposed facilities, including design and technical feasibility and engineering and seismic considerations. Environmental matters both on- and off-shore, public safety, and socio-economic concerns were the focus of the Prince Rupert sitting. The hearing concluded in Ottawa on

¹ Up-to-date information on the status of ongoing proceedings, including advance notice of forthcoming regulatory actions, is contained in the Board's Regulatory Agenda, which is issued quarterly, on the first day of March, June, September, and December.

30 November after an examination of the cost of the facilities and Canadian content.

The remaining issues of the project's economic viability and assured supply of gas will be dealt with in a subsequent phase or phases of the hearing. In addition, the Board expects to have a hearing into Westcoast's application in 1984.

Interprovincial Pipe Line Limited – Propane Facilities

The Township of Flamborough, Ontario, requested a review of a Board decision to permit Interprovincial to locate propane terminal facilities in the Flamborough area. The Board decided to hold a hearing to receive the submissions of interested parties on the location of the facilities.

The hearing commenced in Burlington, Ontario, on 16 August 1983 and on 19 August was adjourned until 28 September 1983. On 28 September, the hearing resumed in Flamborough, but once again was adjourned, this time to a date to be announced later. This second adjournment followed an action launched by the Township of Flamborough, which sought leave to appeal to the Federal Court of Appeal both on the grounds of the Board's legal jurisdiction over two aspects of the matter under review and on the grounds of an alleged apprehension of bias on the part of one Member of the Board participating in the hearing. Although the Court granted leave to appeal, the appeal itself was not to be heard until 1984.

Interprovincial Pipe Line Limited – Tolls

In November, the Board concluded

a public hearing into an application filed by Interprovincial Pipe Line Limited (IPL) for an order approving the tolls and tariffs to be charged by IPL for the transportation of crude oil and other liquid hydrocarbons in 1984. IPL's pipeline extends from Edmonton to Montreal. The Board will be releasing its Reasons for Decision in early 1984.

Trans Québec & Maritimes Pipeline Inc. – Tolls

In late August Trans Québec & Maritimes Pipeline Inc. (TQM) filed an application for orders fixing the tolls it charges for the transportation of natural gas in the Province of Quebec, effective 1 January 1984.

TQM applied for an increase in its total tolls to \$7.9 million per month from the current \$6.3 million. It sought approval of a total cost of service, for the twelve-month period ending 31 December 1984, of \$94.8 million, determined in part by applying a rate of return of 14.25 percent to an average rate base of \$439.6 million. Requested rate of return on equity was 16.5 percent.

The Board set the application down for public hearing to commence on 11 January 1984.

In November, TQM applied for an interim increase in its current toll until such time as the Board disposes of its application. The Board issued the interim order extending the current toll until the Board issues its final order arising from its January hearing.

Trans Québec & Maritimes Pipeline Inc. (TQM) and Gaz Inter-Cité Québec Inc. – Pipeline Certificate

On 12 December 1983, the Board

began a hearing to examine two issues:¹

- (i) the desirability of amending certificate GC-65 in the light of circumstances which have changed since the issuance of the certificate to TQM;
- (ii) an application by Gaz Inter-Cité Québec Inc. for a review of a previous Board decision not to order TransCanada PipeLines Limited to provide maximum operating pressure at the Sabrevois Sales Meter Station, located at the interconnection point of TransCanada's trunk line and the Sherbrooke, Quebec lateral to be constructed by Gaz Inter-Cité Québec Inc.

Hydro-Québec – Certificate and Export Licences

Hydro-Québec applied in April for a certificate of public convenience and necessity for the construction of a 450 kV direct-current international power line and four licences to export electricity to the New England Power Pool (NEPOOL) in the United States.

The first licence would be for the period 1986 to 2004 and would cover the export to New England of electricity produced by NEPOOL but stored in Hydro-Québec's system. The other three licences would apply to the export of electricity by Hydro-Québec to members of

¹ The Board's Reasons for Decision on the second issue were released in early 1984. Consideration of the first matter has been deferred until 23 January 1984.

NEPOOL for periods of 16, 18 and 19 years respectively, between 1986 and 2004.

The Board plans to hear the application in 1984.

Westcoast Transmission Company Limited — Method of Toll Regulation

The Board will conduct a hearing in 1984 in Vancouver, British Columbia, to determine whether

the tolls of Westcoast Transmission Company Limited should continue to be regulated by a fixed-toll method. The hearing will also consider other matters affecting the method of regulating the tolls of Westcoast.

British Columbia Hydro and Power Authority — Export Licences

British Columbia Hydro and Power

Authority applied in December 1983 for three new licences to export firm and interruptible power and energy to the western United States for a six-year period, starting 1 October 1984. The requested licences would replace licences that expire on 30 September 1984. The Board plans to hear the application in March of 1984.

GENERAL REVIEW OF THE ENERGY SECTOR

Supply and Demand

The 1981-82 recession touched bottom late in 1982 and in 1983 the Canadian economy showed remarkable improvement.

Strong growth in consumer spending (particularly autos and household durables) and a substantial rebound in housing activity, spurred by lower interest rates, the slowdown in inflation and increased consumer confidence, were the major factors leading the economy out of the recession.

In the energy sector, world oil prices in 1983 continued on a downward trend, reflecting the large degree of slack that has characterized world oil markets since 1981. The average price paid by Canadians for imported crude landed at Montreal declined in 1983 by about 4.0 percent from

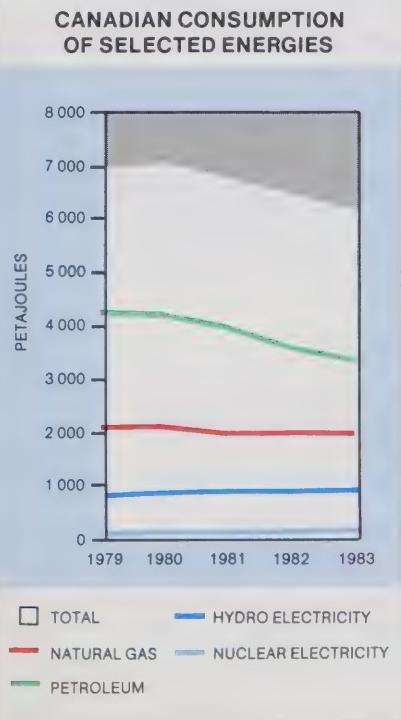
the level of the previous year. Domestic oil prices increased on 1 January 1983 as scheduled in the agreements between the Federal Government and the governments of the producing provinces. The increase originally scheduled to go into effect on 1 July was however foregone as a result of the Amendment to the Federal/Alberta Agreement signed on 30 June 1983. On average, the price of domestic crude oil at the Montreal refinery gate increased by about eight percent from its 1982 level, although it still remained below the equivalent cost of imported crude at Montreal. The wholesale price of natural gas at the Toronto city gate remained at approximately 65 percent of the price of crude oil at the Toronto refinery gate, as established in the federal-provincial Agreements. On average, the wholesale price of natural gas at Toronto increased by about 8.5 percent from its 1982 level.

Though energy demand started to pick up in the second

quarter of 1983, it is likely that final figures for the year as a whole will show that total secondary energy use declined but not to the same extent as in 1982. Consumption of natural gas is expected to decline by about 3.2 percent, mainly as a result of abnormally warm weather in the early months of the year (Table 2). Demand for refined petroleum products declined by about 8.7 percent in 1983 as the shift from oil to alternative energy sources continues. Demand for electricity, on the other hand, is expected to increase modestly by about 2.7 percent in 1983 (Table 14), an increase in sales resulting from utility marketing programs and the economic recovery offsetting a first-quarter decline.

As in previous years, 1983 production of conventional crude oil was below capacity levels, with an average of 5.0 percent of the productive capacity in Western Canada shut in. The equivalent figure in 1982 was 6.0 percent. The reduction in shut-in productive capacity resulted from a Board decision to allow some short-term

FIGURE 2



CANADIAN CONSUMPTION OF SELECTED ENERGIES
Unit: Petajoules

Table 2

| | 1979 | 1980 | 1981 | 1982 ^(p) | 1983 ^(e) |
|---------------------|----------------|----------------|----------------|---------------------|---------------------|
| PETROLEUM* | 4 174.6 | 4 164.9 | 3 902.3 | 3 520.3 | 3 215.1 |
| NATURAL GAS | 2 005.1 | 2 010.1 | 1 966.5 | 1 997.9 | 1 933.3 |
| HYDRO ELECTRICITY | 775.6 | 813.1 | 833.4 | 812.6 | 818.3 |
| NUCLEAR ELECTRICITY | 119.8 | 129.1 | 136.1 | 130.2 | 169.2 |
| TOTAL | 7 075.1 | 7 117.2 | 6 838.3 | 6 461.0 | 6 135.9 |

(p) preliminary
(e) estimates

*Includes LPG'S.

*Data on consumption of petroleum includes non energy use.

*Based on Statistics Canada monthly publication 45-004. These statistics are on a different basis than those in Statistics Canada quarterly publication 57-003 which is used in the preparation of forecasts for Board Energy Supply and Demand reports.

exports of light crude oil and annual export licences for heavy crude oil.

Total production of domestic crude oil and equivalent hydrocarbons such as condensate averaged 230 229 cubic metres per day in 1983, an increase of 5.8 percent from the 1982 level.

The output of synthetic crude oil averaged 25 364 cubic metres per day in 1983, an increase of 33 percent from the 1982 level. Both the Suncor and Syncrude plants in Alberta experienced various upsets during 1983, the largest of them being a fire in one of the upgrading units of the Suncor plant on July 1, which halted upgrading operations at that plant for more than two months. Because of these problems, 2 347 cubic metres per day of synthetic production was marketed as semi-processed

synthetic crude, while fully processed crude production averaged 22 844 cubic metres per day. Suncor produced at 80.0 percent of its rated capacity of 9 500 cubic metres per day when production of semi-processed oil is included, but only at 59.0 percent of rated capacity if only fully-processed oil is considered. Syncrude produced at 74.0 percent of rated capacity of 24 000 cubic metres per day when including semi-processed oil but at 72.0 percent of rated capacity, considering only fully-processed oil.

Direct exports of crude oil and equivalent hydrocarbons to foreign refiners in 1983 averaged 42 832 cubic metres per day; exports under exchange agreements amounted to 4 858 cubic metres per day, a decline of 52.0 percent over 1982. Bulk exports of refined petroleum products reached a total of 15 462 cubic metres per day this year, as opposed to 10 670 cubic metres per day a year ago. Licensed exports of aviation and marine fuel used in international transportation averaged 3 585 cubic metres per day during the first four months of 1983.

Exports of natural gas to the United States amounted to

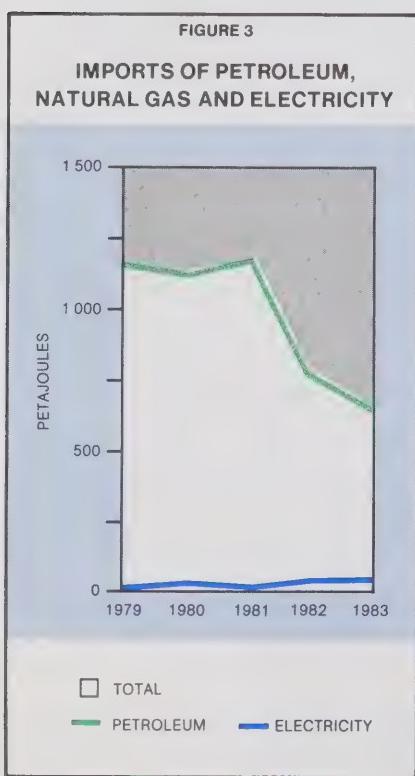
20 168.8 million cubic metres or 31.3 percent of total marketable production, a decrease of 9.1 percent compared to 1982 levels. The decrease in export volumes is due mainly to increased competition from U.S. indigenous gas. Revenues for 1983 were \$3.94 billion, a decrease of 18.0 percent compared to 1982.

Canada's total net installed electrical generating capability at the end of 1983 is estimated at 83 300 megawatts, up about 7.0 percent from 1982. Total Canadian Consumption of electric energy in 1983 is estimated to have been 355 000 gigawatt hours, an increase of 3 percent from 1982. Total exports of electric energy in 1983 were 38 830 gigawatt hours, an increase of 13.5 percent over the previous year.

Exploration and Development Activity

In 1983 exploratory and development drilling in Canada increased by 19.0 percent over the previous year. Approximately 7 150 wells were drilled in 1983, compared to 6 000 in 1982.

The most notable increases in drilling activity occurred in Saskatchewan and Manitoba, and



IMPORTS OF PETROLEUM, NATURAL GAS AND ELECTRICITY
Unit: Petajoules

Table 3

| | 1979 | 1980 | 1981 | 1982 ^(p) | 1983 ^(e) |
|--------------|----------------|----------------|----------------|---------------------|---------------------|
| PETROLEUM | 1 157.6 | 1 112.3 | 1 160.4 | 772.8 | 643.3 |
| ELECTRICITY | 18.9 | 31.0 | 15.8 | 30.1 | 33.5 |
| NATURAL GAS* | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 |
| TOTAL | 1 176.6 | 1 143.4 | 1 176.3 | 803.1 | 676.9 |

(p) preliminary (e) estimates

* Insufficient quantities to show on graph

were attributable mainly to oil development and exploration. In Saskatchewan 1 800 wells were drilled compared with 808 in the previous year, while Manitoba's drilling increased to 250 wells from 190. Alberta experienced a marginal increase to 4 800 wells from 4 750 in 1982. British Columbia was the only western province which registered a decrease in drilling activity, from 108 wells in 1982 to 71 in 1983.

On Canada lands, in areas of the Yukon Territory and the Northwest Territories mainland, the Mackenzie Delta — Beaufort Sea area, the Arctic Islands and the East Coast offshore region, 87 wells were drilled, compared with 48 in 1982 and 21 in 1981. The increase over the two previous years was due mainly to drilling undertaken to develop the Norman Wells oil field.

The number of available drilling rigs in Canada increased slightly from 495 in 1982 to 510 in 1983. Utilization of these rigs, however, decreased to 37.0 percent from 45.0 percent in 1982.

The number of geophysical crews active in Canada was significantly increased over the previous year, reflecting the industry's pursuit of new oil accumulations in Alberta, Saskatchewan and Manitoba.

The following is a more detailed account of significant drilling activity during 1983. (Locations are identified on the accompanying map.)

Alberta

The effects of reduced gas exports and the New Oil Reference Price (NORP) were reflected in industry's continued emphasis on oil targeted exploration and development activity in 1983. The concentration of accelerated activity was generally in areas of known oil production. In these areas, primarily in northwestern and west-central Alberta (1 to 7), small scattered oil accumulations contributed significantly to provincial production.

British Columbia

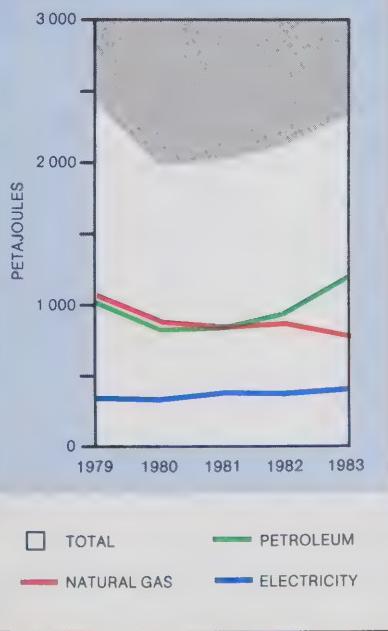
For the second consecutive year, drilling in British Columbia declined significantly. This was principally the result of depressed gas export markets. In the northwestern part of the province, where most of the exploration and development drilling is focused, an oil discovery was made in an area which historically had exhibited primarily natural gas occurrence (8). More than half of the wells drilled in the province in 1983 were either in or near established oil pools (9).

Saskatchewan

Changes in tax regulations and provincial oil royalties, coupled with an increase in natural gas prices, stimulated drilling activity to an all-time high in Saskatchewan during 1983. The main focus was on development of existing oil pools and on new discoveries in the highly prospective heavy oil belt in the west-central part of the province (10). In southwestern Saskatchewan (11) drilling activity was concentrated on the development of shallow gas reserves.

FIGURE 4

EXPORTS OF PETROLEUM, NATURAL GAS AND ELECTRICITY



EXPORTS OF PETROLEUM, NATURAL GAS AND ELECTRICITY

Unit: Petajoules

| | 1979 | 1980 | 1981 | 1982 ^(p) | 1983 ^(e) |
|--------------|----------------|----------------|----------------|---------------------|---------------------|
| NATURAL GAS | 1 089.7 | 863.1 | 823.6 | 850.1 | 770.6 |
| PETROLEUM | 1 002.0 | 810.3 | 826.2 | 935.1 | 1 172.8 |
| ELECTRICITY | 331.1 | 318.4 | 373.2 | 361.0 | 409.7 |
| TOTAL | 2 422.8 | 1 991.8 | 2 023.0 | 2 146.2 | 2 353.1 |

(p) preliminary
(e) estimates

Table 4

Manitoba

Development of oil reserves in the Waskada area (12) continued, with 250 wells being completed in 1983, a 30.0 percent increase over the previous year.

Yukon and Northwest Territories Mainland

During 1983, 63 wells were drilled compared with 29 wells in 1982. Development of the Norman Wells oil field (13) for the purpose of a waterflood program accounted for the drilling of 60 wells. Approximately half of the wells planned for this project have been drilled to date.

Elsewhere three exploratory wells were drilled and subsequently abandoned.

Mackenzie Delta - Beaufort Sea

Activity in the Mackenzie Delta - Beaufort Sea region during 1983 was extensive, both onshore and offshore.

On the Tuk Peninsula, Esso PEX Home et al abandoned wells at Natagnak O-59 and Pikiolik G-21 as no hydrocarbons were encountered. At year end, the Esso PCI Home et al Nuna A-10 and Tuk M-09 wells were being drilled (14).

Offshore in the Beaufort Sea, the Esso PEX Home et al Itiyok I-27 well (15), located 12 km southeast of the 1980 oil and gas discovery at Issungnak, recovered oil and gas from a number of thin sands and has been classified as a significant oil and natural gas discovery. Esso Home et al Kadluk O-07 (16), a well located 14 km southeast of the 1980 Tarsiat discovery, was being drilled at year end from a Caisson Retained Island (CRI), a sand platform retained by a massive steel ring.

The Dome Texaco et al Uviluk P-66 well (17), located 21 km northeast of the Ukalerk C-50 gas discovery of 1977, was drilled utilizing the Single Steel Drilling Caisson (SSDC), a converted tanker resting on a pre-built sand berm. Only small amounts of oil were recovered from tests and the well was subsequently abandoned.

Because of ice conditions, drilling from drillships was suspended for the drilling season at the Dome et al Siulik I-05, Havik B-41, Natiak O-44 and Arlik E-90 well locations. Drilling at these locations is due to resume in 1984.

Gulf et al Pitsiulak A-05, the first well to be drilled by Gulf's new Conical Drilling Unit (CDU), a floating conical unit using anchors for positioning, is located 16 km west of Tarsiat. The well was

suspended for the season as deteriorating ice conditions forced cessation of drilling operations. Drilling was also suspended at the Gulf et al Amauligak I-44 well due to ice conditions, while Gulf et al Kogyuk N-67 was being drilled from a SSDC at year end.

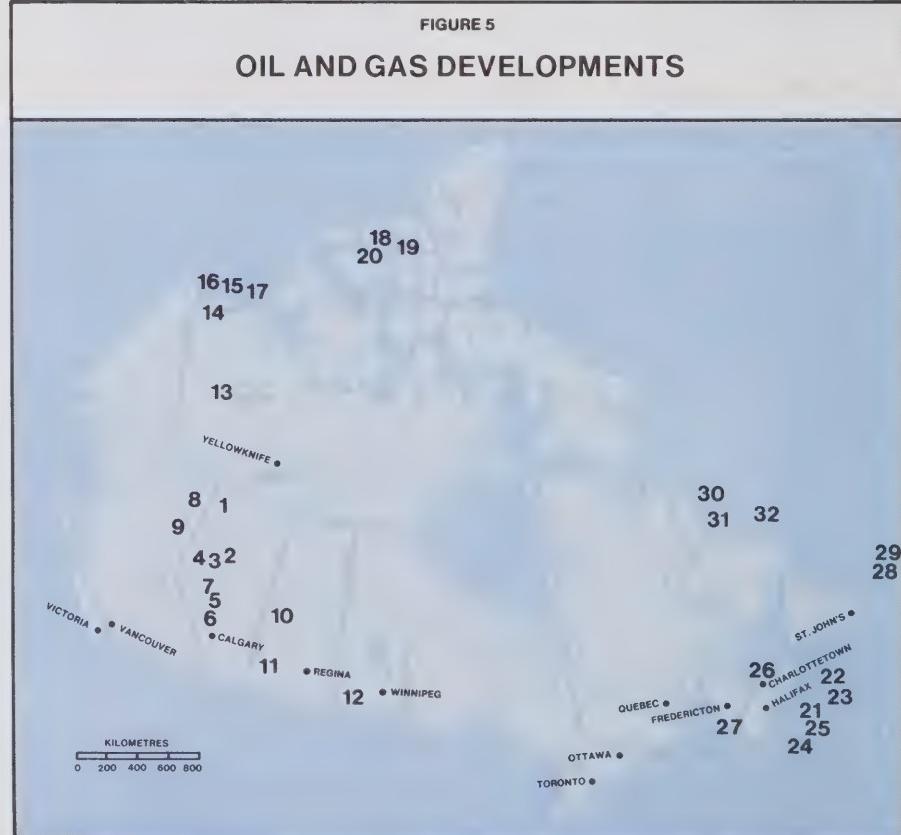
Arctic Islands

Panarctic et al Cisco K-58 (18), a well drilled 5 km north of the Cisco B-66 oil and gas discovery of 1981, was abandoned after flowing oil at non-commercial rates.

Panarctic et al Cape MacMillan 2K-15 (19), an exploratory well located 40 km east of the King Christian gas field, was classified as a significant natural gas discovery.

FIGURE 5

OIL AND GAS DEVELOPMENTS



Panarctic et al abandoned Grenadier A-26 (19), a well drilled from a reinforced ice platform approximately 50 km south of the King Christian gas field. The Panarctic et al Marryatt K-71 well (20), located approximately 6 km southwest of the Drake Point gas field was also abandoned after natural gas was recovered at low flow rates.

Panarctic et al Sherard Bay F-34 (20), a well located 20 km south of the Drake Point gas field, was being drilled at year end.

East Coast Offshore

On the Scotian Shelf, delineation drilling continued at the Venture field (21), 210 kilometres from the coast of Nova Scotia and 16 km east of Sable Island.

Mobil et al Venture B-52, the third delineation well, evaluated the southwestern sector of the structure. Many of the reservoir sands tested water, indicating pool limits in that direction.

Mobil et al Venture H-22, the fourth delineation well at Venture, located on the southeastern part of the structure, was being drilled at year end.

Near Venture, on separate geological structures, four exploratory wells were drilled at Mobil Texaco PEX Olympia A-12 and South Venture O-59, and at Mobil et al Bluenose 2G-47 and Arcadia J-16 well locations. Generally, small gas flow rates and disappointing reservoir characteristics were observed.

Elsewhere on the Scotian Shelf, Petro-Canada et al West Esperanto B-78 (22) and Southwest Banquereau F-34 (23), Shell et al Shubenacadie H-100 (24), and Shell Petro-Canada et al Glenelg J-48 (25) were abandoned, while Shell

Petro-Canada et al Uniake G-72, Husky-Bow Valley et al Glooscap C-63, Shell PCI et al Alma F-67, and Home et al Louisbourg J-47 were drilling at year end.

In the Gulf of St. Lawrence, Irving-Chevron Texaco Cablehead E-95 (26) was abandoned, and Petro-Canada St. Paul P-91 was drilling at year end (26), while in the Bay of Fundy Irving-Chevron et al Cape Spencer #1 (27) was abandoned. This was the first well to be drilled in the Bay of Fundy.

On the Grand Banks, Mobil and partners continued delineation drilling at the Hibernia field (28), located 325 km east of St. John's, Newfoundland, with four wells drilled during the year. To date, there have been nine wells drilled in the Hibernia field.

Hibernia I-46, the sixth delineation well in the field, was drilled 5.8 km west of the Hibernia P-15 discovery well, to evaluate the west side of the structure. Flow rates were disappointing compared to those from previous wells in the field.

The Hibernia J-34 well, drilled by the ill-fated Ocean Ranger, was subsequently re-entered. Oil flows were recorded from four out of five zones tested and the well was classified as a suspended oil and gas well. In late 1983, Hibernia B-27 was also classified as a suspended oil and gas well after significant flow rates were tested from eight zones. At Hibernia K-14, the eighth delineation well, the testing program was being completed at year end.

Recent well results underline the extremely complex nature of the Hibernia field. Subsequent geological and geophysical evaluation should provide a better understanding of this accumulation.

Elsewhere on the Grand Banks, Mobil et al North Dana I-43 (29) and Trave E-87 (29) and Petro-Canada Terra Nova K-08 (28) wells were being drilled at year end, while the Mobil et al Bonanza M-71 (29) and Rankin M-36 wells (28) were abandoned.

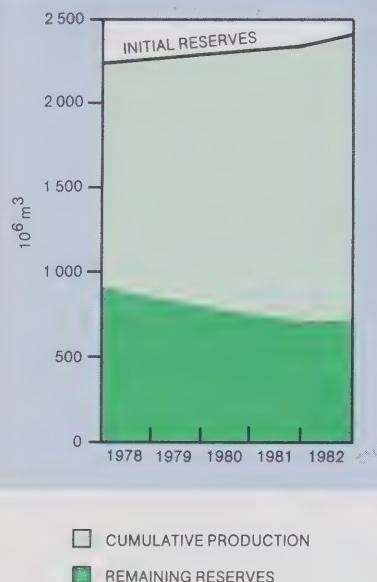
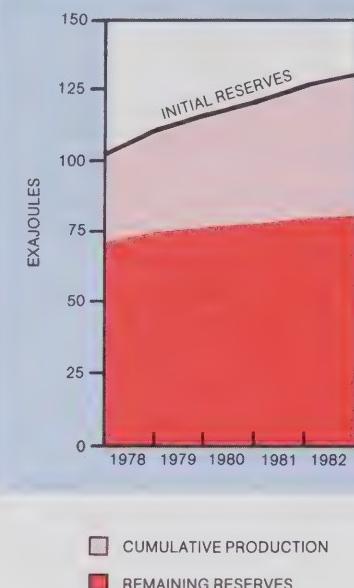
Little encouragement was realized from drilling results on the Labrador Shelf in 1983. Three wells were abandoned: Petro-Canada et al Pothurst P-19 (30), and Corte Real P-85, (31) and Canterra et al South Hopedale L-39 (31). The Petro-Canada et al Pining E-16 (32) well was suspended temporarily after mechanical problems prohibited further drilling.

OIL AND GAS RESERVES

The Board's estimate of remaining established reserves of conventional crude oil as of 31 December 1982 was 735.7 million cubic metres, 20.2 million cubic metres greater than the 31 December 1981 estimate.¹ Initial established reserves at 31 December 1982 were estimated at 2420.7 million cubic metres, an increase of 84.6 million cubic metres from the final 31 December 1981 estimate of 2336.1 million cubic metres. Production in 1982 was 64.4 million cubic metres.

In the Board's June 1981 report, Canadian Supply and Demand 1980-2000, established reserves of 50 million cubic metres were credited to the offshore Hibernia field, east of Newfoundland, based on the results of three successful oil wells drilled in the field at the time the

¹ The Board's year end estimates are not available until late in the year following.

FIGURE 6
ESTIMATED ESTABLISHED RESERVES OF CONVENTIONAL CRUDE OIL FROM CONVENTIONAL PRODUCING AREAS
**FIGURE 7**
ESTIMATED ESTABLISHED RESERVES OF MARKETABLE NATURAL GAS FROM CONVENTIONAL PRODUCING AREAS


estimate was made. To date, nine wells have been drilled. The Board's estimate of established reserves for the Hibernia field remains unchanged until more definitive information becomes available. No established reserves for oil are currently being recognized by the Board for other frontier regions. The Board's estimate of established reserves may be made as the result of the energy supply and demand update currently being undertaken.

The Board's estimate of remaining established reserves of marketable natural gas in the conventional producing areas as of 31 December 1982 is 81.4 exajoules, 0.6 exajoules higher than its 31 December 1981 estimate. Initial established reserves at 31 December 1982 were estimated at 130.0 exajoules, an increase of 3.4 exajoules from the final 31 December 1981 estimate of 126.6 exajoules. Production in 1982 was 2.8 exajoules.

Net additions to initial established marketable natural gas reserves in conventional producing areas during 1982 were 3.4 exajoules. Increases of 2.9 exajoules in Alberta and 0.5 exajoules in British Columbia were recorded.

The estimate for natural gas in the frontier regions is 17.6 exajoules, which remains unchanged from the 31 December 1981 estimate. In frontier regions, the Board recognizes established reserves only in the Mackenzie Delta area and in the Arctic Islands.

ESTIMATED ESTABLISHED RESERVES OF MARKETABLE NATURAL GAS AT 31 DECEMBER 1982 (EXAJOULES)

| | Initial | Remaining |
|---|--------------|-------------|
| British Columbia | 15.9 | 9.7 |
| Alberta | 109.6 | 69.3 |
| Saskatchewan | 2.8 | 1.7 |
| Southern Yukon and Northwest Territories | 0.6 | 0.4 |
| Ontario and Other Eastern Producing Areas | 1.1 | 0.3 |
| Total | 130.0 | 81.4 |
| Mackenzie Delta | 5.6 | 5.6 |
| Arctic Islands | 12.0 | 12.0 |
| Canada Total | 147.6 | 99.0 |

ESTIMATED ESTABLISHED RESERVES OF CONVENTIONAL CRUDE OIL AT 31 DECEMBER 1982 (MILLION CUBIC METRES)

| | Initial | Remaining |
|-----------------------|---------------|---------------|
| British Columbia | 80.4 | 23.9 |
| Alberta | 1868.9 | 567.8 |
| Saskatchewan | 392.6 | 100.4 |
| Manitoba | 29.1 | 7.5 |
| Northwest Territories | 39.9 | 35.6 |
| Ontario | 9.8 | 0.6 |
| Canada Total | 2420.7 | 735.7* |

Note: Propane, butanes and pentanes plus are not included.

* Total does not equal sum of components due to rounding.

Report on Operations

CRUDE OIL AND PETROLEUM PRODUCTS

The experiences of 1983 suggest that the steep downturn in world oil demand since 1979 was more than a short-term phenomenon related to the level of economic activity, having deeper origins involving basic structural change which in turn led to a reduction of expectations in an industry accustomed to decades of rapid growth. Operations of the international oil industry continued to contract during this past year, with no sign of a trend toward recovery to earlier levels of activity. Responding to a further 2.5 percent decline in demand, world oil production outside of the centrally planned economies¹

averaged 6.6 million cubic metres per day which was 8.8 percent lower than 1982 and 20.0 percent below that of the peak year of 1979.

The impact on some producing countries of the decline in oil demand, and the ensuing price weakness was damaging to their economies. The resulting loss of oil revenues contributed to serious difficulties of foreign indebtedness for several countries. The cohesion of the Organization of Petroleum Exporting Countries (OPEC) was strained, but an agreement reached in March 1983 on the reduction of the OPEC price structure and its revised production output ceilings was sufficient to avert a general price collapse. Throughout the remainder of the year, worldwide oil markets remained soft as a result of a decline in the volume of oil trade and a substantial reduction in inventory levels. Spot prices showed volatility at times, but, in contrast with the experience of only a few years earlier, political crises in or near producing regions failed to elicit exaggerated response in spot markets. The problems of already existing overcapacity in the marine transport industry were worsened by a reduction of east-west transatlantic oil movements.

Some of these features of the international petroleum scene in

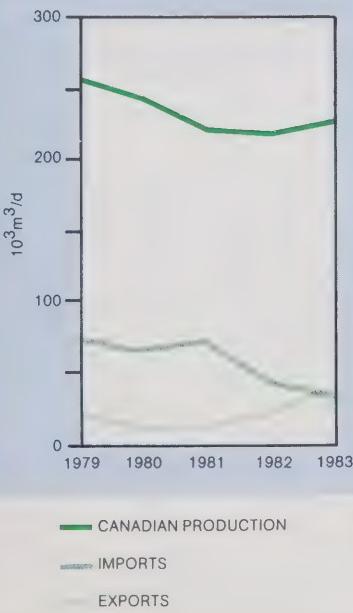
1983 were also reflected in the Canadian petroleum situation, as for example in the case of crude oil feedstock imports, which declined to 12.8 million cubic metres in 1983.

The Canadian oil scene continued to be highlighted during 1983 by reduced domestic demand for refined petroleum products. This lower product demand, accompanied by refinery closures and significant reductions in crude oil and product inventories, contributed to the shut-in of an average 19 000 cubic metres per day of domestic light crude oil production during the first five months of 1983. Reductions in inventories in the first half of the year occurred in large part in anticipation of a 1 July 1983 reduction in the Petroleum Compensation Charge (PCC), which did not materialize. To alleviate the effect of shut-in domestic light crude oil production, the Board licensed the export of 4 338 000 cubic metres of light crude oil over the months of April to December. Domestic demand for Canadian light crude oil subsequently strengthened and exceeded available supply from June to December, necessitating an allocation of domestic light crude oil. This increased Canadian demand for domestic light crude oil reflected replenishment of

1 As defined by the International Energy Agency.

FIGURE 8

CRUDE OIL AND EQUIVALENT HYDROCARBONS PRODUCTION, IMPORTS AND EXPORTS



CRUDE OIL AND EQUIVALENT HYDROCARBONS PRODUCTION, IMPORTS AND EXPORTS
Unit: $10^3\text{m}^3/\text{d}$

Table 8

| | 1979 | 1980 | 1981 | 1982 ^(p) | 1983 ^(e) |
|---------------------|---------|---------|---------|---------------------|---------------------|
| CANADIAN PRODUCTION | 256.497 | 244.612 | 220.110 | 217.707 | 230.229 |
| IMPORTS | 76.146 | 69.629 | 71.403 | 43.751 | 33.818 |
| EXPORTS | 24.972 | 14.834 | 15.798 | 24.818 | 42.832 |

(p) preliminary
(e) estimates

depleted inventories and the attractive economics of domestic crudes over equivalent quality offshore crude. This stimulus was aided by the continued subsidy of the movement of domestic light crude oil to Atlantic refiners. As a result of these circumstances, deliveries to the Atlantic region through trans-shipment from Montreal or via eastern Canadian exchange arrangements averaged some 7 400 cubic metres per day over the year. Despite the shut-in of domestic light crude oil during the first half of 1983, deliveries of domestic crude oil and equivalent hydrocarbons to Canadian refineries approximated 1982 levels, whereas crude oil imports dropped by 22.5 percent.

Canadian demand during the year for the main petroleum products (gasoline, middle distillates, heavy fuel oil) declined by 7.2 percent from 1982 levels, with the Atlantic and Quebec regions leading the downward trend. Demand for heavy fuel oil plummeted by 24.7 percent during 1983, while motor gasoline and middle distillate demand fell by 5.2 and 2.6 percent, respectively.

Canadian refinery crude runs were 4.7 percent lower in 1983 than the year before, declining by about 11 500 cubic metres per day, to 232 100 cubic metres per day. Atlantic and Quebec refineries' throughput declined from an average 89 200 cubic metres per day in 1982 to about 77 500 cubic metres per day in 1983. During 1983, crude runs west of Quebec approximated 1982 levels.

One of the most significant results of reduced oil product demand was the number of refinery closures. The Canadian refining industry is in the midst of

restructuring processing arrangements and facilities to meet the changing trend in product demand toward light products and lower demand levels. This restructuring process has resulted in the closing of uneconomical plants and the upgrading of others.

The Board's practice of providing a monthly overview of the oil supply/demand balance in Canada to industry representatives and federal and provincial officials was maintained.

Exports and Exchanges

Surplus volumes of heavy crude oil continued to be exported to refiners in the northwestern United States. These exports averaged a record level of 31 775 cubic metres per day, exceeding that achieved in 1982 by 43.0 percent. These higher exports can be attributed to the increased surplus and the ability of export markets to absorb the Canadian oil. The U.S. market demand was reinforced by competitive pricing of the Canadian oil, the continuation of yearly licensing, which was introduced in 1982, and the expansion of the market area to include Montana refineries.

In April of 1983, the Board licensed a significant volume of light crude oil for export, especially the sour grades that are not as attractive to most Canadian refiners (these exports were in addition to the small exports of available light crude oil not readily accessible to Canadian refiners). This move was designed to assist Canadian producers whose cash flow was being eroded because lower Canadian demand did not require utilization of full production capability. Notwithstanding the

soft international market and the general expectation of falling prices, exports of light crude reached a peak of 16 328 cubic metres per day in July averaging out at 8 710 cubic metres per day for the year. Exports of partially processed synthetic crude oil averaged 2 347 cubic metres per day in 1983.

The decline in crude oil requirements of U.S. refineries in 1983 contributed to a substantial reduction of approximately 71.0 percent to 2 674 cubic metres per day in the volumes being exported under mid-continent exchanges through which domestic crude oil is exported from Western Canada to U.S. refiners against the receipt of U.S. domestic crude oil in Canada. Eastern Canadian exchanges requiring Canadian crude oil to be exported to U.S. refiners in return for offshore shipments delivered to Eastern Canada averaged 2 185 cubic metres per day.

Bulk exports of licensed petroleum products averaged 15 462 cubic metres per day, about 45.0 percent higher than those of 1982. Licensed imports of heavy fuel oil averaged 3 153 cubic metres per day during 1983.

Licensees reported that 3 585 cubic metres per day of marine and aviation bunker fuels were exported under licences issued by the Board during the first four months of 1983. As a result of the April Budget, the National Energy Board Act Part VI Regulations were amended effective 1 May 1983, eliminating the export licensing of marine and aviation bunker fuels consumed in international transportation. The Transportation Fuel Compensation Recovery (TFCR) Charge applied

to exports of marine bunkers under a program administered by the Board, and the prescribed range of prices set by the Governor in Council applied to aviation bunkers used on international flights, were also discontinued effective 1 May 1983 in view of the narrowing spread between world and domestic oil prices.

Revenue Sharing

The Board continued to administer the program providing for the equal sharing of crude oil export charge revenues with the producing provinces. Negotiations were commenced in May 1983 to revise procedures for sharing the charge revenues in order to reflect more accurately the proportions of oil originating in individual producing provinces. Since the inception of the program in

November 1980, approximately \$769 million of oil export charge revenues have been redistributed to the producing provinces. In 1983 approximately \$144 million were redistributed.

NATURAL GAS AND GAS PRODUCTS

Production and sales of natural gas in 1983, influenced by economic recession and competition from surplus U.S. gas which reduced exports, declined slightly from the 1982 levels. Net sales of natural gas in Canada during 1983 decreased by 3.0 percent, and exports to the United States declined by 9.1 percent. Production in British Columbia decreased by 7.1 percent, while production in Alberta declined by 4.7 percent from the 1982 production levels.

Natural Gas Production and Consumption

In 1983, Canadian production of marketable natural gas decreased by 5 019.0 million cubic metres

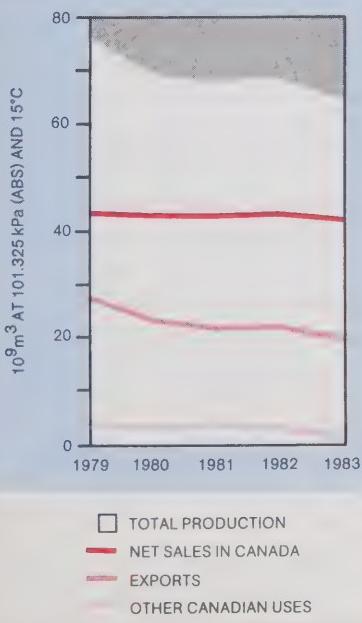
from the 1982 levels, a decrease of 7.2 percent. Net sales of natural gas in Canada during 1983 decreased by 1 295.0 million cubic metres, a reduction of approximately 3.0 percent. Consumption in the residential sector declined by 10.2 percent while the commercial sector registered a decline of 7.1 percent. The industrial sector, which represents approximately 52.3 percent of total net sales in Canada, increased 3.1 percent reflecting an improvement in the economy. During 1983, the supply of natural gas from Western Canada was extended to Quebec City following completion of the Trans Québec & Maritimes Pipeline Inc. facilities.

Domestic Natural Gas Pricing

The Energy Administration Act (EAA), formerly the Petroleum Administration Act, assigns responsibility for the administration of domestic natural gas pricing to the Board. Part III of the EAA provides the Government with the authority to achieve a

FIGURE 9

NATURAL GAS PRODUCTION



NATURAL GAS PRODUCTION*
Unit: 10^9 m^3 at 101.325 kPa (abs) and 15°C

Table 9

| | 1979 | 1980 | 1981 | 1982 ^(p) | 1983 ^(e) |
|----------------------------|---------------|---------------|---------------|---------------------|---------------------|
| NET SALES IN CANADA | 43.495 | 43.901 | 42.886 | 43.888 | 42.593 |
| EXPORTS | 28.344 | 22.563 | 21.584 | 22.197 | 20.169 |
| OTHER CANADIAN USES** | 3.865 | 2.581 | 3.635 | 3.439 | 1.743 |
| TOTAL PRODUCTION*** | 75.704 | 69.045 | 68.105 | 69.524 | 64.505 |

(p) preliminary

(e) estimates

*Based on Statistics Canada monthly publications 55-002 and 26-006. These statistics are on a different basis than those in Statistics Canada quarterly publication 57-003 which is used in the preparation of forecasts for Board Energy Supply and Demand reports.

**Includes Pipeline Fuel and Losses and Other Deliveries, less Imports and Inventory Changes.

***Marketable Pipeline Gas.

uniform price, exclusive of transportation and service costs, for natural gas sold within Canada, but outside the province of production. The EAA serves as a mechanism to enable the government to achieve a balanced relationship between the prices of natural gas and alternative fuels sold in Canada. The Act also helps to achieve a balance between the interests of consumers and producers in Canada, while encouraging the discovery, development and production of natural gas.

Under section 50 of the Act, the Minister of Energy, Mines and Resources may enter into an agreement with the government of a producing province to establish prices for natural gas produced in the province for sale outside that province. On 1 September 1981, a new Federal/Alberta pricing agreement was reached, which came into effect on 1 November 1981. The Agreement provided for natural gas price increases at the Alberta border of 23.3 cents per gigajoule every six months until 31 January 1987. In 1983, the Alberta border price was set at 240.1 cents per gigajoule and 263.4 cents per gigajoule effective 1 February and 1 August, respectively. On 30 June 1983, an amendment to the September 1981 Agreement was signed. Under the Amendment, the six-month changes in the price of gas at the Alberta border for the period 1 August 1983 to 31 January 1985 would be calculated on the basis of maintaining the ratio of the price of gas to 65.0 percent of the price of domestic crude oil delivered at the Toronto city gate. The establishment of the price of gas at the Alberta border to maintain the gas/oil price ratio at

65.0 percent would only take effect after the Natural Gas and Gas Liquids Tax (NGGLT) had been reduced to zero and when the aggregate increases over the period in the transmission tolls for gas to the Eastern Zone of TransCanada's pipeline system had been held to 5.0 percent from the 1 February 1983 levels.

The NGGLT on marketable pipeline gas, under the Natural Gas and Gas Liquids Tax Regulations, was decreased on 1 February 1983 from 63 cents per gigajoule to 45 cents per gigajoule and on 1 August 1983 to 15 cents per gigajoule. The Canadian Ownership Special Charge on natural gas of 14.0 cents per gigajoule, authorized under Part III.2 of the EAA, remained unchanged during the year.

Natural Gas Exports

During 1983, the pressures on Canadian gas exports to the United States became even more severe than in the previous year. They resulted not only from a fall in total American demand for gas, but also from severe price competition encountered in the United States marketplace from residual fuel oil and from United States domestic gas supplies. Because of these factors, the amount of Canadian gas exported was to only 43.0 percent of the total authorized volume from 1 November 1982 to 31 October 1983. Natural gas exports to the United States during 1983 totalled 20 168.8 million cubic metres, approximately 9.1 percent less than exports during the previous year.

In response to declining world oil prices and increasing price competitiveness in U.S. markets,

the Government, on 11 April 1983, reduced the export price for gas from \$U.S. 4.60 per gigajoule to \$U.S. 4.10 per gigajoule. On 6 July 1983, the Minister of Energy, Mines and Resources announced the introduction of a Volume Related Incentive Pricing (VRIP) program for exports of natural gas to the United States. The VRIP program will operate for two years, ending 31 October 1984. During the first year, Canadian exporters were able to sell gas, in excess of an established base quantity, at an incentive price of \$U.S. 3.17 per gigajoule. The base quantity was equal to 50.0 percent of the annual authorized licence level in most cases. A modification to the VRIP program was announced on 1 November 1983 under which exporters are permitted to sell some component of the gas exported each month at the incentive price.

In 1983, as a result of declining United States gas demand and the necessity to lower Canadian export prices in the light of competitive American energy prices, Canadian natural gas export revenues declined by 18.0 percent to \$3.94 billion.

Ethane and Ethylene

Net ethane exports to the United States totalled 2.8 million cubic metres during 1983, whereas there were no net exports of ethylene in 1983. During the year, no new licences or orders were issued by the Board for the export of ethane and ethylene. On 22 December 1983, the Board issued a short-term order authorizing Dome Petroleum Limited to import 160 thousand cubic metres of ethane at Sarnia, Ontario, until 31 March 1984.

Export Control of Propane and Butanes

In 1983, the Board authorized exports of propane and butanes (LPGs) under licences and orders, and set minimum export prices f.o.b. Alberta applicable to all LPG exports. The Board's minimum export prices for LPGs, normally established monthly, ranged from 10.5 cents per litre to 12.5 cents per litre f.o.b. Alberta for propane and from 15.5 cents per litre to 17.5 cents per litre f.o.b. Alberta for butanes. The Board estimated the total net Canadian production for propane and butanes to be 6.6 million cubic metres and 3.9 million cubic metres, respectively, during 1983.

Canadian requirements for propane were estimated to be 3.8 million cubic metres, 31.0 percent more than the 1982-83 allocation year, while Canadian requirements for butanes were estimated to be 1.6 million cubic metres, approximately 50.0 percent more than the previous allocation year. In its calculation of domestic supply of propane, the Board included 538 000 cubic metres of domestic volume remaining in inventory on 31 March 1983.

The export share of the Canadian production of propane was calculated at 45.0 percent at the beginning of the 1983-84 export allocation year and was decreased to 42.5 percent in August 1983, retroactive to 1 April 1983. The decrease in the export share of propane production was necessitated by an increase in domestic retail sales and by the increased use of propane as a petrochemical feedstock. The

export share of the Canadian production of butanes remained at the 70.0 percent level for the period 1 April 1983 to 30 September 1983, at which time, the export share percentage was removed, permitting exporters to export butanes without any quantity restrictions for the remainder of the 1983-84 export allocation year. Despite this relaxation of controls, exports of butanes continued to require Board authorization for monitoring purposes and continued to be subject to the minimum export price set by the Board from time to time. This change in the program resulted from the Board's determination that sufficient supplies of butanes could be assured to satisfy anticipated Canadian demand.

For the calendar year 1983, the estimated total volume of propane exported from Canada was 2.9 million cubic metres, 44.0 percent of estimated total net production. For butanes, the estimated total volume exported in 1983 was 2.3 million cubic metres, 59.0 percent of the total estimated net Canadian production. In 1983, the predominant market for Canadian exports continued to be the United States, with approximately 12.6 percent of propane exports going to Japan and a minimal volume of propane exported to the French Islands of Saint-Pierre-et-Miquelon. All butanes exported were to the United States. The inventory of propane during 1983 ranged from a low of 680 thousand cubic metres to a high of 1 150 thousand cubic metres, while the underground inventory for butanes ranged from 313 thousand cubic metres to 717 thousand cubic metres.

Pipeline Activities

Applications for New Facilities

GAS

In February 1983, Dome Petroleum filed an application for authorization to construct the Western Liquefied Natural Gas (LNG) Project, a liquefaction plant on the West Coast at Grassy Point, B.C., approximately 28 km northwest of Prince Rupert. The plant is intended to liquefy 2.4 exajoules of gas for export to Japan over a 15-year period approved by the Board in January 1983. Phase I of the hearing, which was completed during the year, included the review of engineering design, environmental and socio-economic impact, public safety, and markets. The timing of the second phase, which will include the evaluation of the project's economic viability and the availability of an assured supply of gas, depends on the submission of further important data by the company.

In connection with the Western LNG Project, Westcoast Transmission Company Limited applied in May 1983 for a project involving the construction of the transmission facilities that would be required to transport gas to the liquefaction plant (Fig. 1). The major components of the project are 600 km of 610 mm Outside Diameter (O.D.) pipeline, 162 km of 559 mm O.D. pipeline, and 18 km of 914 mm and 1067 mm O.D. pipelines to provide additional looping on Westcoast's existing mainline system, four compressor stations of 48 megawatt (MW) total power and an additional 3 MW uprating

of an existing station, and three meter stations. The development of proposed storage facilities at Aitken Creek in the Peace River District of B.C. as part of the LNG project is also under review.

Westcoast also applied, and was authorized by the Board, to construct two meter stations, one at Hixon and the other at Tumbler Ridge, for use on its existing facilities. The Board also approved applications by Westcoast for additions and modifications to compressor stations, as well as for a general annual upgrading of other company facilities.

TransCanada PipeLines Ltd. filed an application in October 1982 for additional facilities along the Niagara line portion of the TransCanada system to accommodate anticipated increases in export sales and other requirements. Owing to the Board's decision in January 1983 to approve less than half the applied-for additional quantities sought by TransCanada for sale to the United States (see table "Summary of Exports"), the company did not press consideration of its applications during the year. A revised application is expected in 1984.

TransCanada also has an application before the Board regarding the proposed abandonment of a portion of its Niagara system in Ontario. The portion extends 40 km from Maple to Lisgar. The company has also applied for modifications at Compressor Station 209 and the construction of a new temporary compressor station at Mainline valve (MLV) 211, both within the Niagara system. The latter application is directed at increasing the export capacity of the line to meet current

requirements. Both applications are still under review. Also still under review is an application to construct a new compressor station at MLV 148 in St-Lazare, Quebec, to serve the TQM pipeline system.

TransCanada applied for and received approvals for the construction of meter stations in Quebec at Vaudreuil, Sabrevois, and Beauharnois in Quebec, and Brighton and Val Gagné in Ontario. It was also given approval to upgrade sections its system, a project consisting mainly of pipeline replacements in areas of increased population density, under-designed road crossings and highway construction. These replacements are necessary to comply with the existing Canadian standards on gas pipeline systems.

Trans Québec & Maritimes Pipeline Inc. was given approval in June 1983 to construct the Saint-Maurice and l'Assomption meter stations in the Province of Quebec.

The above-mentioned approvals, as well as all others issued by the Board during 1983 for new gas pipeline facilities, are listed in Appendix G-II.

OIL

With regard to oil pipeline facilities, Manito Pipelines Ltd. received Board approval in May 1983 to construct additional pipeline and other facilities for the company's Blackfoot to Hazeldine extension in Alberta near the Saskatchewan border.

In May 1982, Interprovincial Pipe Line Ltd. filed an application to upgrade its No. 8 line from crude oil to high vapour pressure¹ service. The project, which included the construction of a propane delivery and loading

terminal in the township of Flamborough, Ont., was approved by the Board in May 1983. This decision as it relates to the location of these facilities is currently under review and is the subject of public hearings. This subject is covered in more detail in the section entitled Legal Matters. Also in May 1983, Interprovincial was given approval for additional injection facilities at Hardisty, Alberta.

Dome Petroleum Ltd. applied in May 1983 for the installation of additional pumping equipment at the Empress Pump Station in Alberta and at Laporte, Saskatchewan. These facilities will serve the Dome Kerrobert line, which carries natural gas liquids from Empress, Alberta to Kerrobert, Saskatchewan. The project was approved by the Board in September 1983.

In October 1983, Trans-Northern Pipelines filed an application for authorization to install four pumping units on its Eastern Line to increase the line's capacity for deliveries from Nanticoke, Ontario to Montreal.

Other approvals issued by the Board during 1983 for new oil pipeline facilities are included in Appendix O-II.

Pipeline Construction and Operation

As a regulatory body, the Board is responsible for all matters relating to the construction of oil and gas pipelines, monitoring the prudence

1 The definition of a high vapour pressure pipeline is a pipeline transporting hydrocarbons as hydrocarbon mixtures in the liquid or quasi-liquid state with vapour pressure in excess of 240 kPa at 38°C.

FIGURE 10
OIL & PRODUCT PIPELINE COMPANIES REGULATED BY THE N.E.B.



FIGURE 11
GAS PIPELINE COMPANIES REGULATED BY THE N.E.B.

1. ALBERTA NATURAL GAS COMPANY LTD.
2. AMOCO CANADA PETROLEUM COMPANY LTD.
3. CANADIAN-MONTANA PIPE LINE COMPANY
4. CHAMPION PIPE LINE CORPORATION LIMITED
5. CONSOLIDATED PIPE LINES COMPANY
6. DOME PETROLEUM LIMITED
7. FOOTHILLS PIPE LINES LTD.
8. ICG TRANSMISSION LIMITED
9. MANY ISLANDS PIPE LINES (CANADA) LIMITED
10. MID-CONTINENT PIPELINES LIMITED
11. MINELL PIPELINE LTD.
12. MURPHY OIL COMPANY LIMITED
13. NIAGARA GAS TRANSMISSION LIMITED
14. PEACE RIVER TRANSMISSION COMPANY LIMITED
15. SASKATCHEWAN POWER CORPORATION
16. TRANSCANADA PIPELINES LIMITED
17. TRANS QUEBEC AND MARITIMES INC.
18. UNION GAS LIMITED
19. WESTCOAST TRANSMISSION COMPANY LIMITED
20. WESTERN DECALTA PETROLEUM LIMITED

— EXISTING PIPELINES
- - - PROPOSED PIPELINES



of actual expenditures, and ensuring that companies comply with safety and environmental regulations, Canadian standards and certificate terms and conditions, involving both engineering and environmental matters. Upon completion of pipeline construction, the Board is responsible for the comprehensive monitoring of pipeline operations and investigation of pipeline operating incidents.

During the first half of 1983, the remaining portion of the Trans Québec & Maritimes mainline from Trois Rivières to Québec City was completed as well as the Québec West lateral and meter station. The Board's involvement with this construction included the review of design drawings, design changes during construction, hydrostatic test results, and the audit of radiographic films of field welds.

Among hydrostatic test documentation reviewed during 1983 was that for several meter stations and sales taps on TransCanada's mainline as well as their pipe replacement program in Ontario, Quebec, Manitoba and Saskatchewan, Trans Mountain's line retesting program, the three remaining compressor stations constructed on the Eastern leg of the Alaska Highway Gas Pipeline, several meter stations on Westcoast's system in British Columbia, and its Fort Nelson sulphur recovery plant, and a crude blend tank and associated piping on Manito's line at Kerrobert, Saskatchewan. Leave-to-open orders were issued following the satisfactory review of the above-mentioned test results.

During 1983, the Board continued its review of reports filed by Interprovincial Pipeline

(NW) Ltd. concerning geotechnical, environmental and engineering issues on the line from Norman Wells, N.W.T. to Zama, Alberta. The reports included the design of pump stations, drainage and erosion control procedures, the environmental and construction inspection program for mainline and facility construction, material specifications, for line pipe, steel valves and fittings, a structural analysis and soil-pipe interaction study, and the crossing of rivers and geotechnically sensitive areas. Following an intensive review of these reports, leave-to-construct this line was issued by the Board on 10 June 1983. The Environmental Protection Plan for construction was approved on 2 November 1983 following an intensive review by the Board. All clearing activities, site development activities and the preparation for mainline construction on this line were closely monitored by the Board during the year.

The Board is currently reviewing its Oil and Gas Pipeline Regulations and Rules of Practice and Procedure with regard to improved methods of safety and technology. During 1983, the Board initiated an Industry/Regulatory committee through the Canadian Standards Association to draft standards applicable to future Canadian offshore pipelines. The drafting of these standards has been in progress since May and an initial draft should be completed early in 1984.

As part of the monitoring of the safe operation of pipelines, the Board reviewed reports on such items as fibre-reinforced pipe, stresses in buried lines at uncased

crossings, testing procedures, the use of polyethylene liners in crude oil emulsion gathering lines, depth of cover requirements and the use of air testing on oil pipelines.

The Board also undertook several special studies and investigations related to the safety, environmental and engineering aspects of pipeline operations. These included a study on the environmental implications of pipeline crossings of watercourses, as well as the investigation of slopes and erosion problems on the Trans Québec & Maritimes line, odour problems at the Westridge terminal in Burnaby, B.C., on Trans Mountain's line and various landowner complaints on lines under the Board's jurisdiction.

Pipeline Inspection

The Board inspects the facilities of companies under its jurisdiction to ensure that environmental protection measures are being followed, employee and public safety are being protected, and facilities are constructed and maintained in a manner that meets the Board's standards.

During the early part of 1983, clearing was begun on the right-of-way of the oil pipeline to be built by Interprovincial Pipe Line (NW) Ltd.'s line from Norman Wells, NWT to Zama, Alberta. The inspection of this clearing was conducted by the Board to ensure that IPL's Environmental Protection Plan was being followed. Site development activities were also inspected during February and March of 1983, while the snow clearing of access roads and snow clearing and packing of the right-of-way were inspected during the fall. The

Board participated in an overflight of the pipeline right-of-way during the summer to view the effects of the clearing on the environment. A geotechnical reconnaissance of the cleared areas was also undertaken.

Construction inspection during 1983 included portions from Trois-Rivières to Québec City on the Trans Québec & Maritimes line, as well as their meter station at Québec City West, portions of TransCanada's pipe replacement program, and several replacement sections on Trans Mountain's line as well as their pump station upgrading program.

Hydrostatic tests were witnessed on TransCanada's line, Trans Mountain's line and the Trans Québec & Maritimes line.

Routine operational and safety inspections were conducted during the summer and fall of 1983 on the facilities of the majority of lines under the Board's jurisdiction.

In order to monitor the follow-up rehabilitative activities required of companies, monitoring reports filed to meet certificate conditions were reviewed and post-construction inspections were conducted on the Trans Québec & Maritimes line from St. Lazare and Boisbriand as far as Trois-Rivières, on the 1981 and 1982 facilities of TransCanada in Saskatchewan and Manitoba, and on the TransCanada pipe replacement program in southern Québec.

Pipeline Incidents

Several pipeline incident locations were visited to inspect the emergency, safety and environmental protection procedures in effect at the time of

SUMMARY OF CAUSES OF 1983 PIPELINE INCIDENTS

| | Gas Pipelines | Oil and Product Pipelines | High Vapour Pressure Pipelines | Total |
|-------------------------------|---------------|---------------------------|--------------------------------|-----------|
| Corrosion | | 7 | | 7 |
| Equipment & Materials Failure | 1 | 1 | | 2 |
| Defective Welds | 3 | 1 | 2 | 6 |
| Third Party Damage | 1 | 3 | | 4 |
| Miscellaneous | 4 | 9 | 1 | 14 |
| TOTAL | 9 | 21 | 3 | 33 |

CAUSES OF PIPELINE INCIDENTS - 1979-1983

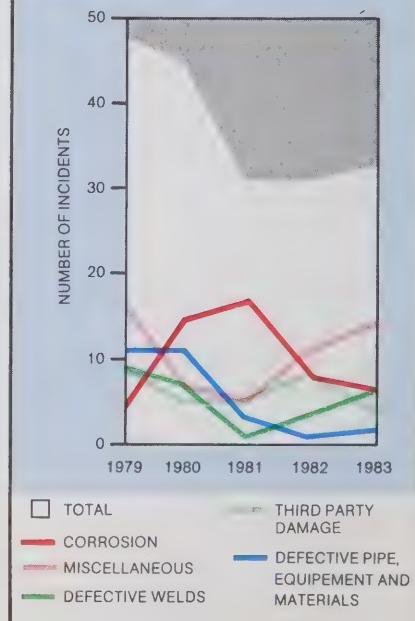
Table 12

| | 1979 | 1980 | 1981 | 1982 | 1983 |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|
| Corrosion | 4 | 15 | 17 | 8 | 7 |
| Equipment & Materials Failure | 11 | 11 | 3 | 1 | 2 |
| Defective Welds | 9 | 7 | 1 | 3 | 6 |
| Third Party Damage | 8 | 5 | 5 | 8 | 4 |
| Miscellaneous | 16 | 7 | 5 | 11 | 14 |
| TOTAL | 48 | 45 | 31 | 31 | 33 |

the incidents. These incidents included an oil spill on the Wascana line at Wascana Creek near Regina, Saskatchewan, an oil spill on the Interprovincial pipeline system near Strome, Alberta and an explosion at the purchase meter station on TransCanada's line near Liebenthal, Saskatchewan, which resulted in the death of one employee and injury to another.

The Board requires detailed reports of all incidents involving personal injury or fatality, or a leak, break, fire, explosion, failure or malfunction of pipelines under its jurisdiction. These reports, combined with follow-up investigations, are major factors in improving pipeline standards, operational procedures, technological development and regulatory requirements.

FIGURE 12
CAUSES OF PIPELINE INCIDENTS



SPECIAL STUDIES

Study on the Cost of Regulation of Pipeline Construction

In February 1983, at the request of the Board, the Pipelines Branch initiated an investigation into the cost of regulation to pipeline companies. The report which resulted from this study was released in June 1983 under the title "Staff Study of the Cost to Pipeline Companies of NEB Regulation of Pipeline Construction: The Case of the North Bay Shortcut".

The study had two objectives. The first was to establish quantitatively the costs incurred by pipeline companies as a result of the NEB regulatory requirements. The second was to investigate ways by which these costs could be minimized without undermining regulatory objectives.

In cooperation with TransCanada PipeLines, Board staff carried out a case study of the recently constructed North Bay Shortcut. At the time of the study, the estimated cost of the project was \$439 million. All stages of the regulatory process were investigated, from the time of application to the pipeline construction, inspection, testing, and placement in service.

The study concluded that total regulatory costs associated with pipeline construction amounted to \$4.2 million. That amount represents less than one percent of the total project cost of \$439 million, not including interest during construction. This indicates that the cost of federal regulation remains small relative to the cost of the project. The cost of \$4.2 million could have been

eliminated only in a complete absence of any regulatory environment. Of the \$4.2 million cost of regulation, an amount of \$2.4 million was found to be unavoidable, given the nature of the Board's mandate. With respect to activities related to the balance of \$1.8 million of regulatory costs, it was found that some costs could have been reduced or eliminated. The study also highlighted TransCanada's intention to use large-diameter pipe for this project. The Board's review of the application led to an inquiry which resulted in a decision by TransCanada to use a smaller-diameter pipe. This reduction in pipe size resulted in a savings of \$83 million. In a letter appended to the study, TransCanada disagreed with Board staff that these cost savings were attributed to the Board's review of the application and claimed that they would have reduced the pipe size on their own accord.

At the time of the study, the Board had already initiated a review of its procedural and filing requirements. This, with the implementation of the recommendations set out in the report and improved communication with regulated companies, should result in reduced regulatory costs.

Board Response to the Horte Report

In September of 1983, the Minister of Energy, Mines and Resources released the report by the Task Force on Pipeline Construction Costs. Mr. V.L. Horte, a former president of TransCanada PipeLines Ltd., chaired this task force, whose mandate was to consider the ways of resolving the

problem identified in an NEB staff study published in June 1982 on past and prospective pipeline building costs between 1975 and 1985.

Board staff reviewed the recommendations of the Task Force and advised the Board on the implications of these recommendations for the pipeline industry, in general, and for the Board, in particular. Their comments formed the basis for the Board report entitled, "Response to the Recommendations Contained in the Task Force Report on Pipeline Construction Costs", which was presented to the Minister in November 1983.

ELECTRIC POWER ACTIVITIES

ELECTRICITY

At the end of 1983, Canada's total net installed electrical generating capability was approximately 83 300 megawatts, of which hydroelectric plants accounted for 51 332 megawatts, conventional thermal stations 22 658 megawatts, and nuclear power 6 231 megawatts. Changes planned in 1983 would add additions of approximately 2 754 megawatts of hydroelectric, 937 megawatts of conventional thermal, and 1 383 megawatts of nuclear generation, in all an increase of about 7.0 percent over 1982. Total generation of electricity in 1983 is estimated to have been 390 000 gigawatt hours, up about 3.6 percent over 1982. Of this, approximately 67.0 percent was supplied from hydroelectric generation, 21.0 percent from conventional thermal generation, and 12.0 percent from nuclear generation.

International and Interprovincial Transfers of Electricity

Gross exports of electricity in 1983 were 38 830 gigawatt hours, (34 220 gigawatt hours in 1982) and imports were 3 179 gigawatt hours (2 849 gigawatt hours in 1982), resulting in net exports of 35 651 gigawatt hours (31 371 gigawatt hours in 1982). These net exports constituted about 9.0 percent of total Canadian generation (about eight percent in 1982).

Export revenues of about \$1 249 million (\$1 106 million in 1982) and import costs of \$6.2 million (\$5.4 million in 1982) resulted in net revenue of approximately \$1 243 million (\$1 101 million in 1982).

In 1983, total Canadian electricity exports both in quantity

and revenue, were 13 percent higher than in 1982.

The firm sales increased 75% in quantity and 84% in revenue due to new firm sale agreements with U.S. utilities, which came into effect in 1983. A significant portion of this increase is the firm export of nuclear energy by The New Brunswick Electric Power Commission from Point Lepreau since February, and another major factor was additional short term firm sales from Ontario Hydro to Niagara Mohawk Power Corporation in New York State.

The interruptible sales decreased 2.0 in quantity and 7.0 in revenue. This reduction in growth was partially due to lack of good market conditions for the B.C. utilities which exported 50% less than in 1982. Also, Ontario Hydro, while increasing substantially its firm exports (4 155 GW.h from 1 199 GW.h) decreased interruptible exports by 10.0. These reductions were partially offset by increased interruptible exports from other major exporters.

Demand in the U.S. has increased due to the economic recovery and utilities wishing to displace as much oil as possible. All Canadian exporters with the

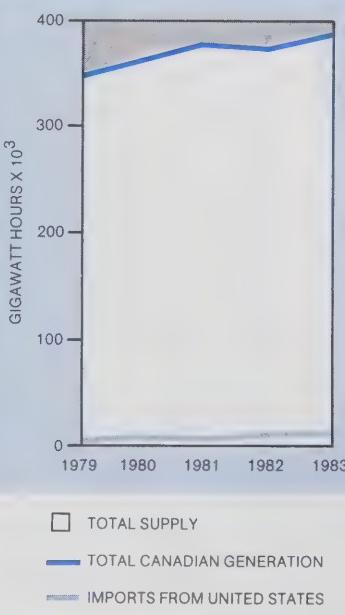
exception of British Columbia utilities were able to take advantage of good market conditions in the U.S. whenever they had surplus energy available.

Returns submitted to the Board by the major exporting utilities for 1983 showed that 57.0 percent of the electricity exports came from hydro generation, 33.0 percent from imported coal, 5.0 percent from nuclear, 3.0 percent from imported oil, and 2.0 percent from Canadian oil and gas. These figures show an increase in exports from nuclear-generated power and a reduction in exports from imported oil compared with 1982.

Before electricity can be sold to United States markets, it must be determined by the Board to be surplus to reasonably foreseeable Canadian requirements. The Board usually also requires that before export the power first be offered to economically accessible Canadian markets. For these reasons, the Board monitors Canadian power generation and interprovincial transfers, although it does not regulate these matters.

Electricity supply and demand are tabulated and displayed in Figures 13 and 14. Figure 15 shows exports and

FIGURE 13
ELECTRICITY SUPPLY



ELECTRICITY SUPPLY
Unit: Gigawatt hours x 10³

Table 13

| | 1979 | 1980 | 1981 | 1982 ^(p) | 1983 ^(e) |
|----------------------------|----------------|----------------|----------------|---------------------|---------------------|
| TOTAL CANADIAN GENERATION | 353.051 | 367.306 | 380.131 | 376.470 | 390.000 |
| IMPORTS FROM UNITED STATES | 1.792 | 2.940 | 1.497 | 2.849 | 3.179 |
| TOTAL SUPPLY | 354.843 | 370.246 | 381.628 | 379.319 | 393.179 |

(p) preliminary
(e) estimates

imports in 1983 as well as interprovincial transfers for the 12 months ending October 1983.

No certificates of public convenience and necessity involving construction of electric facilities under Board jurisdiction were issued in 1983. A related amending order issued during the year is shown in Appendix E-II.

New licences to export power and energy and related amending orders issued during the year are tabulated in Appendices E-III and E-IV.

Exports of electric energy under each licence and order during the year are tabulated in Appendix E-V and the total electric energy trade is shown in Appendix E-VI.

OTHER ELECTRIC POWER ACTIVITIES

The annual statistical report prepared by the Board on Canadian thermal generation for

the year 1981 was completed and distributed early in the year.

The Board entered into discussions with Statistics Canada, the Canadian Electrical Association (CEA) and the North

ELECTRICITY DEMAND
Unit: Gigawatt hours $\times 10^3$

Table 14

| | 1979 | 1980 | 1981 | 1982 ^(p) | 1983 ^(e) |
|----------------------------|----------------|----------------|----------------|---------------------|---------------------|
| TOTAL CANADIAN CONSUMPTION | 323.465 | 340.065 | 346.256 | 345.099 | 354.349 |
| EXPORTS TO UNITED STATES | 31.378 | 30.181 | 35.372 | 34.220 | 38.830 |
| TOTAL DEMAND | 354.843 | 370.246 | 381.628 | 379.319 | 393.179 |

(p) preliminary

(e) estimates

FIGURE 14
ELECTRICITY DEMAND

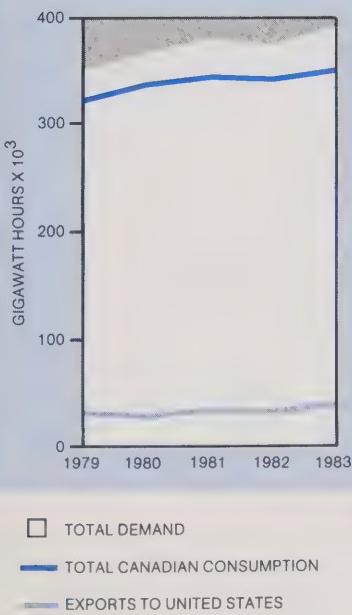


FIGURE 15
INTERNATIONAL AND INTERPROVINCIAL TRANSFER OF ELECTRICITY (GIGAWATT HOURS)

Note: Data for interprovincial transfers of electricity are from 1 November 1982 to 31 October 1983 and are compiled from "Statistics Canada: Electric Power Statistics Monthly."

Data for United States imports and exports are for 1983 and are compiled by the National Energy Board



American Electricity Reliability Council (NERC) with the objective of reducing duplication in the reporting of electricity statistics by Canadian electrical utilities.

As part of the Board's operational preparedness, it has conducted research work on new analytical techniques to quantify the benefits of interconnections between power systems as well as initiated a pilot study to verify the results of these investigations.

Services provided to other departments and outside agencies in 1983 included advising the Economic Council of Canada on modifications to its energy production model. The Board also participated in discussions with the Department of Energy, Mines and Resources on matters related to electricity exports.

ENVIRONMENTAL MATTERS

Pipelines and International Power Lines

Protection of the environment is a major concern of the Board when reviewing and considering applications, during construction, and throughout the operations. The Environment and Right-of-Way Group of the Pipelines Branch is the principal source of advice to the Board on environmental matters related to both pipeline facilities and international power lines.

In considering applications, the Board seeks to ensure that an adequate environmental assessment has been carried out, and that the undertakings of the applicants to protect the environment are appropriate. The Board is also responsible for ensuring that the environmental

protection measures implemented by the companies are effective. This is accomplished by using a team of environmental scientists to analyze applications, to ensure appropriate measures are in place for construction, to ensure compliance with all environmental protection practices, and to monitor the follow-up rehabilitative activities required of the companies.

During 1983, the Board undertook an environmental review of several major applications, including the Dome Petroleum Western LNG project, the Westcoast Transmission Co. Limited Western LNG pipeline, the Interprovincial Pipe Line Limited proposed propane truck and rail loading facilities propane conversion project at Flamborough Ontario, the Hydro-Québec Sherbrooke to Nepool interconnection; and the New Brunswick Electric Power Commission export application.

The Board also reviewed several environmental monitoring reports that were submitted to satisfy the conditions of certificates issued for various projects including TransCanada Pipeline's 1980, 1981 and 1982 looping programs, the North Bay Shortcut; and TQM's St-Lazare to Boisbriand and Boisbriand to Trois-Rivières pipeline construction.

ROUTING

Pipelines and International Powerlines

The National Energy Board Act, as amended in March 1983, now sets out a two-stage procedure for the approval of the routes of

international or interprovincial pipelines and international power lines. Although no detailed route proceedings were held by the Board in 1983, the following is an outline of the new procedures that will be followed.

First the Board grants a Certificate of Public Convenience and Necessity for a pipeline or power line, providing approval for the general routing of the proposed project. The second stage of the approval process deals with the routing of the projects in detail wherein a company is required to prepare and file plans, profiles and books of reference indicating the precise location of the line, the lands to be crossed, and the identity of landowners involved.

Coincident with the filing of plans, profiles and books of reference, the company must serve notice on all landowners whose lands are to be acquired for the project. The company must also publish, in a local newspaper, a notice describing the proposed detailed route and the procedure for presenting objections. Any landowner or affected party who considers that their lands may be adversely affected by the line may file a written statement of objection with the Board.

Upon receiving notice of objection to the proposed route, the Board is required to hold a local public hearing to consider the objection. The public hearing affords landowners and affected parties with an opportunity to have their views taken into account prior to the Board's determination of the final route. In deciding the best possible route, the Board takes into account not only representations made at the

hearing, but also written submissions.

In addition to involving landowners and affected parties in the detailed routing process, the new section of the Act make provision for payment of compensation for the acquisition of land or for damages suffered as a result of project operations. Authority in matters of compensation rests with the Minister of Energy, Mines and Resources, rather than with the Board.

ECONOMIC MATTERS

A number of economic evaluations, analyses and studies were undertaken by the Board during 1983. Applications, submissions and projects under review were examined and

assessed, and investigations were undertaken on aspects concerning economic viability, cost-benefit, regional socio-economic problems, Canadian content and the application of natural gas surplus tests. In particular, considerable analysis was undertaken with respect to the Canadian content and socio-economic aspects of the proposed Western LNG Project. The Board has been actively participating in monitoring socio-economic impacts of the IPL (Norman Wells) pipeline in collaboration with the Department of Indian and Northern Affairs and the company. In addition, various electric power export applications were assessed with respect to their economic viability and proposed sale prices. The Board also carried out a review of various pipeline toll applications which involved an assessment of wages, salaries, benefits and cost escalation factors.

Of particular significance in 1983 was a workshop on benefit-cost analysis of energy projects held in Calgary, which was co-sponsored by the Board and the Canadian Energy Research Institute. The workshop discussed the methodology that was used by the Board in its 1982

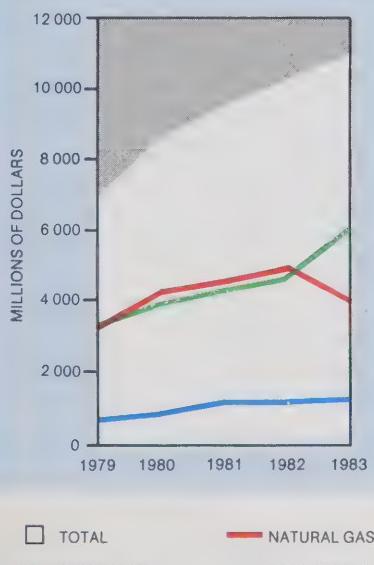
analysis of proposals for the export of natural gas and a number of generic issues applicable to the evaluation of any energy project. The workshop was successful in promoting improved understanding of benefit-cost analysis as it relates to energy projects and in generating a consensus on some of the more important methodological issues. (The Board published the proceedings of this workshop in early 1984).

Further improvements were made in the Board's energy demand models used in the analysis and evaluation of submissions as well as in the preparation of the Board's projections. In developing its energy demand forecasts, the Board used an integrated energy demand forecasting system with a comprehensive database.

The collaboration between federal departments to improve the quality and usefulness of energy data continued during the year. An interdepartmental working group undertook a number of specific and general projects aimed at improving the quality of data for users, and the development of a more comprehensive and coordinated set of statistics. Work also

FIGURE 16

DOLLAR VALUE OF EXPORTS



DOLLAR VALUE OF EXPORTS OF PETROLEUM, GAS AND ELECTRICITY (GROSS)

Unit: Millions of Dollars

Table 16

| | 1979 | 1980 | 1981 | 1982 ^(p) | 1983 ^(e) |
|--------------|----------------|----------------|----------------|---------------------|---------------------|
| NATURAL GAS | 3 063.1 | 4 035.5 | 4 409.3 | 4 807.8 | 3 940.0 |
| PETROLEUM | 3 279.4 | 3 860.4 | 4 108.1 | 4 410.7 | 5 897.2 |
| ELECTRICITY | 738.5 | 793.6 | 1 143.9 | 1 105.9 | 1 248.5 |
| TOTAL | 7 081.0 | 8 689.5 | 9 661.3 | 10 324.4 | 11 085.7 |

(p) preliminary
(e) estimates

continued on the computerization of the Board's data banks.

FINANCIAL REGULATORY MATTERS

During the year, the Board continued its monitoring of the accounting practices and financial results of oil and gas pipeline companies under its jurisdiction. This was accomplished through analysis of periodic or special reports required by the Board and by ongoing field examinations. These examinations were carried out to verify compliance with the Board's Uniform Accounting Regulations, and with specific directives issued by the Board in relation to accounting, toll and tariff matters, such as the treatment to be accorded particular items of a company's rate base or cost of service.

Revised Gas Pipeline Uniform Accounting Regulations, which replaced those that came into effect in September 1969, were approved by the Governor in Council and published in February, 1983.

The Board is in the process of amending its oil pipeline toll adjustment procedures in order to make them formally applicable to Trans Mountain Pipe Line Company Ltd. and Trans-Northern Pipelines Inc. Prior to this proposed change, the procedures that were developed specifically for Interprovincial Pipeline Limited and Cochin Pipe Lines Ltd. were applied informally to Trans Mountain Pipe Line Company Ltd. and Trans-Northern Pipelines Inc. Under these procedures, the four pipeline companies may apply or be required by the Board to revise tolls and tariffs to reflect changes in the throughput and routine

changes in rate base and cost of service. Such applications do not require a public hearing, provided there is no change in the principles or the rate of return established in a previous Board Decision. During the year, five toll revisions were allowed pursuant to these procedures.

On 27 September 1983, the Board held a meeting with representatives of the oil and gas pipeline companies under its jurisdiction and representatives of the Canadian Petroleum Association. The purpose of that meeting was to outline the approach which the Board follows in regulating entities under its jurisdiction with respect to toll proceedings. At that meeting discussion centered on a draft document prepared by the Board outlining its philosophy and approach to toll regulation. Attendees at the meeting were invited to submit written comments to the Board.

Subsequently, the document was revised following consideration of the submissions received. An opportunity was given for all parties who had intervened in toll proceedings since January 1981 to review the revised document and submit their comments to the Board. The Board intends to publish the document entitled "Regulation of Tolls and Tariffs under Part IV of the NEB Act" early in 1984 in an NEB Information Bulletin.

As a result of the 27 September 1983 meeting, two separate industry committees were established, one covering large oil pipeline companies and the other covering large gas pipeline companies. The purpose of these committees is to make recommendations to the

companies and the Board concerning:

- (a) Reporting with respect to surveillance of construction and tolls, and
- (b) Information requirements with respect to toll and tariff applications.

The Board prepared a revised draft of "Construction Cost and Toll Reporting Regulations", which was forwarded for review and comment to all oil and gas pipeline companies regulated by the Board. These revised draft regulations cover reports required to be filed by all pipeline companies. When effective, the regulations will replace the Board's memorandum of guidance with respect to construction cost reporting issued 21 October 1966 and the Toll Information Regulations, which came into effect 9 April 1979.

Under the provisions of the Energy Administration Act and its supporting Regulations, the Board is responsible for the audit of the oil and oil product licensed exports reported to the Board. This responsibility includes the collection of the export charges levied thereon, which in 1983 resulted in deposits to the consolidated revenue fund of approximately \$352 million.

Under the Transportation Fuel Compensation Recovery Program (TFCR) the Board was delegated responsibility for the collection of export charges which applied to aviation and marine fuels used by foreign and domestic carriers travelling in international commerce. This program was implemented pursuant to Part I of the Energy Administration Act and was in effect from 1 May 1981 to 1 May 1983, but its application

to aviation fuel was eliminated in February 1982. The processing of refunds being claimed by approximately 200 air carriers, which are expected to amount to about \$78 million, is being undertaken by the Board on behalf of the Federal Government. During 1983, the application of the program to marine fuel continued up to the termination date in May, during which period the Board collected approximately \$8.5 million in TFCR charges thereon.

LEGAL MATTERS

Litigation

Dome NGL Pipeline Ltd. and Cochin Pipe Lines Ltd.

In January 1980, the Board amended two certificates held by Dome NGL Pipeline Ltd. and Cochin Pipe Lines Ltd. authorizing the construction and operation of two high-vapour pressure pipelines between Sarnia and Windsor, in Ontario. Certain of these amendments to the certificates required the companies to upgrade the pipelines in accordance with the requirements of Part X of the Board's Oil Pipeline Regulations relating to high vapour pressure pipelines. The two companies applied for leave to appeal the Board's decision on the basis that the Oil Pipeline Regulations were being applied retroactively to the two pipelines. The Federal Court of Appeal on 12 February 1980 granted the companies' applications for leave to appeal. Subsequent to that date, counsel for the parties entered into discussions in an attempt to settle

the appeals. The settlement was finalized and notices of discontinuance were filed with the Federal Court of Appeal on 3 November 1983.

Saskatchewan Power Corporation

In January and February 1982, Saskatchewan Power Corporation and Many Islands Pipe Lines applied pursuant to Section 17 of the National Energy Board Act for an order reviewing and rescinding four orders issued by the Board to TransCanada PipeLines under Part IV of the Act insofar as those orders directed TransCanada to charge the applicants the Imputed Alberta Border Price specified in the orders and disallowed the price stipulated in an agreement between the applicants and TransCanada. The applicants maintained that in a decision rendered on 17 December 1981, the Supreme Court of Canada held that the Board was without jurisdiction to substitute in its Order No. TG-1-76 the Imputed Alberta Border Price for the price fixed under the contract and that, therefore, the orders in question should be reviewed and varied. In August 1982, the Board dismissed the application for review and the applicants sought leave to appeal the Board's decision. The Federal Court of Appeal granted the companies' application for leave to appeal on 30 September 1982, and the Notice of Appeal was filed on 1 October 1982.

Saskatchewan Power Corporation and Many Islands Pipe Lines Limited also filed an application under Section 28 of the Federal Court Act to review and set aside the Board's decision dismissing the application for review and variation of the four orders.

Subsequent to the launching of the appeal and the Section 28 application, the Board wrote to the parties involved to point out that the implementation of the judgment of the Supreme Court of Canada, pronounced on 17 December 1981, was an issue in the above-mentioned appeal. The Board noted further that the judgment of the Supreme Court of Canada had not been certified to the Board for implementation, and that it would appear to be more appropriate to deal with the implementation of the judgment as an administrative matter under section 53 of the Supreme Court Act. Upon receipt of responses from the applicants and TransCanada, the Board amended Order No. TG-1-76 and the three other orders in question to delete reference to the Imputed Alberta Border Price in relation to the Saskatchewan Zone Sales Service.

In light of the amendments to these orders, the section 28 application and the appeal were fully discontinued and withdrawn in March and April 1983.

Trans-Québec & Maritimes Pipeline Inc.

By an application dated 18 November 1981, as supplemented by applications dated 9 August 1982 and 16 February 1983, TQM applied to the Board for orders approving the just and reasonable tolls that the company may charge for or in respect of the transmission of natural gas. TQM is authorized to construct and operate a natural gas pipeline from a point of interconnection with the existing TransCanada system near St-Lazare, Quebec to various points of delivery in the Province of Quebec and beyond into the

Maritime Provinces. This was the Company's first tolls application. At the time of application, construction of the pipeline was proceeding towards Quebec City and the line has since reached that city.

Following a lengthy public hearing in December 1982 and January, February and March 1983, the Board issued its Reasons for Decision, dated June 1983. By application dated 11 August 1983, TQM applied to the Board pursuant to section 17 of the National Energy Board Act for a review of the June 1983 decision. TQM took the position in its application that the tolls approved by the Board in the June 1983 decision were not just and reasonable. The Board dismissed this application on 29 August 1983.

On 7 September 1983, TQM filed with the Federal Court of Appeal an application pursuant to section 28 of the Federal Court Act to have the Board's 29 August 1983 Decision on the review application set aside. In addition, on 26 September 1983, TQM applied to the Federal Court of Appeal pursuant to subsection 18(1) of the National Energy Board Act for leave to appeal the Board's decision of 29 August 1983 dismissing the review application as well as the Board's decision of June 1983 with respect to the tolls application. TQM alleged that the tolls approved by the Board were not just and reasonable, that the Board erred in not giving reasons with its 29 August 1983 decision, and that the reasons that the Board gave in its June 1983 Reasons for Decision were not adequate.

A preliminary question was raised by the Company before the Federal Court of Appeal. TQM,

pursuant to Rules of the Court 1301(3) and 1402, has requested that the Board make available to the Court copies of its internal memoranda and staff papers in connection with both the tolls application and the review application. The Board has declined to provide this information since it does not form part of the record on which the Board's decisions are based and TQM has sought a direction from the Court in this regard. This preliminary question must be resolved before the leave to appeal or the section 28 application can proceed. It is expected that the leave to appeal application will not be heard until early 1984.

Township of Flamborough

By application dated 27 May 1982 as amended 20 October 1982, Interprovincial Pipe Line Ltd. (IPL) applied to the Board pursuant to Section 49 of the National Energy Board Act for exemption from the provisions of Sections 26 to 29 of the Act in connection with certain modifications to IPL's Line no. 8. IPL is the owner and operator of a pipeline system for the transportation of crude oil and other liquid hydrocarbons, including natural gas liquids, from Western Canada to as far east as Montreal. The pipeline begins in Alberta and crosses into the United States at a point on the Manitoba/U.S. border. It re-enters Canada at Sarnia, Ontario. The U.S. portion of the pipeline is owned and operated by IPL's wholly-owned subsidiary, Lakehead Pipeline. IPL's Line No. 8 runs a distance of approximately 210 km from Sarnia, to the vicinity of Westover, Ontario. Line No. 8 currently

transports crude oil from Sarnia to Bronte, Ontario and to IPL's Westover Station for subsequent transportation to Buffalo, New York and Nanticoke, Ontario markets.

The modifications applied for involved a proposal to assign or dedicate Line No. 8 exclusively to propane service. Natural gas liquids would be delivered to Sarnia and fractionated there. Propane would then be injected from the fractionation facility into Line No. 8 for delivery to a proposed truck and rail loading facility to be constructed by IPL near Westover. From Westover, the product would be transported by rail tank car and tank truck to market. By Order No. XO-1-83 dated 4 May 1983, the Board authorized the modifications required to dedicate Line No. 8 to propane service. However, in response to the concerns of local authorities and landowners in the Township of Flamborough, Ontario with respect to the location of the truck and rail loading facilities in their area, the Board, by Order No. MH-1-83 dated 7 July 1983, directed that a public hearing be held to review that portion of the 4 May 1983 decision that approved the location of the propane truck and rail loading facilities.

During the public hearing, the Township of Flamborough challenged the Board's jurisdiction over the project. The Township submitted that Line No. 8 was not a pipeline extending beyond the limits of a province since the propane was to be injected into the line at Sarnia and was to be removed from the line within Ontario. In addition, the Township objected to the use of Section 49 for the modifications proposed. In a decision given on 17 August 1983, the Board ruled that it had

jurisdiction over the pipeline and that the modifications proposed fell within the scope of Section 49. At the hearing, an objection was taken on the ground of a reasonable apprehension of bias with respect to one of the Board members sitting at the public hearing. The Board member had had, several years previously, a professional relationship with one of IPL's witnesses, while both were associated with another company not subject to Board pipeline regulation. At the time of that professional association, neither the Board member nor the IPL witness had been involved with the IPL proposal with respect to Line No. 8. In a decision dated 8 September 1983, the Board ruled that there was no reasonable apprehension of bias.

On 3 October 1983, the Federal Court of Appeal granted the application by the Township, together with other interested parties, for leave to appeal the Board's decisions of 17 August 1983 and 8 September 1983 pursuant to subsection 18(1) of the National Energy Board Act. It is expected the appeal will be heard early in 1984.

Canadian Pacific Airlines

Canadian Pacific Airlines (CP Air) in October 1982 launched an action in the Federal Court of Canada, Trial Division, against the Attorney General of Canada and the Board seeking a declaration that the National Energy Board Act as it then existed did not require

that consumption of aviation fuel on CP Air's international flights be licensed under the NEB Act, and that the Board was without jurisdiction to issue licences in respect of such fuel or to set minimum prices for the sale of such fuel to CP Air by its suppliers. Licensing of the export of such fuel was in effect from May, 1981 to April, 1983. Following the filing by the Board of a Statement of Defence, the Court in February 1983 dismissed a motion brought by CP Air for a decision on a point of law which would, if granted, have decided in favour of the plaintiff a substantial part of the matters in dispute. The action is expected to come to trial in due course.

Wardair Canada (1975) Ltd

In August 1983, Wardair launched an action against the Attorney General of Canada and the Board that is substantially similar to the CP Air action. In addition to declarations similar to those sought by CP Air, Wardair sought declarations of the constitutional invalidity of the National Energy Board Act to the extent that it authorizes the alteration or establishment of prices to be paid by Wardair for aviation fuel consumed in international flights, and of the invalidity of all such licensing decisions made by the Board by reason of alleged substantive and procedural errors in the exercise by the Board of its jurisdiction. Wardair also seeks injunctions prohibiting the

enforcement of the licensing decisions of the Board. A Statement of Defence is being filed.

UNLICENSED EXPORTS AND COLLECTION OF EXPORT CHARGES

During the year, the Board has assisted the Department of Justice in prosecuting several parties for exporting oil without a licence or in breach of a licence. Three convictions were obtained during 1983.

As part of its duty under the Energy Administration Act to administer the collection of charges on oil exported, the Board has in concert with the Department of Justice launched two actions to collect unpaid charges. Both of these actions are being defended.

Appearance before Restrictive Trade Practices Commission (RTPC)

In response to requests by the Director of Investigation and Research (Consumer and Corporate Affairs Canada) and by the Executive Director of the Petroleum Industry Inquiry for the Commission, the Board provided the second part of its Submission to the RTPC which related to the Production and Pipelines phase of its Inquiry. Senior officials of the Oil Branch appeared before the Commission on 24 May 1983 to respond to questions relating to this second submission.

Legislation and Regulations

Following is an outline of changes that were made during 1983 to the Act, Regulations, or Rules under which the Board operates.

AMENDMENTS TO THE NATIONAL ENERGY BOARD ACT

Bill C-108

Bill C-108 made major changes to the NEB Act. Sections 1 to 11 and 14-31, inclusive, of Bill C-108 were proclaimed in July of 1982 and were discussed in last year's Annual Report. Sections 12, 13, and 32 were proclaimed into force on 1 February 1983.

Section 32 of Bill C-108 established Section 90.1 of the National Energy Board Act. Under this Section, the Governor in Council may by order designate "any facility that is to be constructed and operated for the purpose of transmitting power from a place in a province to a place in Canada outside that province" as a facility to which, effectively, the section of the Act applying to international power lines may, by Governor in Council order, be extended to apply.

Section 12 made the part of the NEB Act that deals with pipelines and pipeline companies applicable to international power lines for right-of-way and land matters, including provision for expropriation of lands for purposes of constructing such lines. Any designated interprovincial facilities would be similarly covered by this change.

Section 13 made the provisions of Part V of the National Energy Board Act, except for Sections 63 and 80, applicable to international power lines. Previously Part V had applied only

to pipelines. One result of this amendment was that international power lines became subject to the new negotiation and arbitration procedures established by the approval by Parliament in March 1983 of Bill C-60.

Bill C-60

Further amendments to the NEB Act were occasioned by the proclamation, on 1 March 1983, of Bill C-60, which changed the expropriation procedures for lands acquired for the construction of pipelines and power lines. The effect of Bill C-60 can be described as follows.

Where a company submits a plan, profile and book of reference to the Board for approval, it must also serve notice on affected landowners that it is seeking such approval. If the Board receives any opposition to the specific routing proposal by the proponent, it must hold a public hearing to consider all landowner representations in order to determine the best possible routing for the line and the most appropriate timing and method of construction. If the Board does not receive any filed opposition within the specified time limits, it can immediately approve a plan, profile and book of reference. The Board is also given the right to fix costs in respect of reasonable costs incurred by any person who made representation at the public hearing.

A company can only acquire lands for a line in accordance with a land acquisition agreement or, in the absence of such an agreement, in accordance with new negotiation and arbitration procedures. The new provisions are very specific as to what elements must be included in

either an agreement or an award. Among these is the requirement for review every five years where annual or periodic payments are the form of compensation.

Where a company and a landowner cannot agree on the amount payable for either compensation for land or for damages resulting from the operations of the company, either party can serve a notice of negotiation on the Minister of Energy, Mines and Resources, who in turn must appoint a negotiator.

If the negotiator is unsuccessful, or if the parties wish to dispense with negotiation proceedings, either party can immediately request that the matter be determined by arbitration. This process is conducted by an Arbitration Committee appointed by the Minister. No member, officer, or employee of the National Energy Board can be a member of an Arbitration Committee. For landowners whose land is taken, awards can take the form either of lump sum or periodic payments, and for landowners whose lands are affected, of periodic payments only.

The Bill also instituted a procedure whereby a company may gain an order for immediate right of entry onto the lands it requires. When it seeks such an order, the company must also serve notice on the landowner concerned. The landowner has the right to make representation to the Board to receive advance compensation and to have that compensation set by arbitration.

Bill C-87

On 1 February 1983, Bill C-87 was proclaimed. That bill amended the

NEB Act to authorize the Governor in Council to appoint temporary Board Members up a maximum of six at any one time.

AMENDMENTS TO THE NATIONAL ENERGY BOARD ACT REGULATIONS

The National Energy Board Part VI Regulations

These regulations, which relate to the export and import of oil, gas, and electricity, were amended several times during the year.

Former section 14 of the regulations, which provided for a periodic review of the export price of natural gas and concordant adjustment, was revoked. The procedure is now encompassed by Section 85 of the NEB Act.

Sections 2(1) and 16(4) were amended to bring the definition of electric power and energy into conformity with the International System of Units, and to provide clarification on the method to be employed for the measurement of electricity.

An amendment to Section 27 eliminated the requirement of a hearing for the issue of licences for more than one year for the export of oil products produced under an agreement to process imported crude oil.

Section 17 was amended to give the Board the power to authorize its auditors or other authorized persons to enter premises and inspect records or equipment relating to the import of oil into Canada.

Several amendments to Sections 24 to 34, inclusive, were made to provide for the authorization of oil exports by order instead of licence, where oil

is to be exported and subsequently imported or where oil is to be exported pursuant to an exchange.

The Part VI Regulations were also amended by the Records Retention Project (see below) and as a result of the end of the Transportation Fuel Compensation Recovery Program (also below).

Oil Pipeline Regulations

An amendment to Section 133 of the Oil Pipeline Regulations delineated those provisions of the regulations applicable to new high vapour pressure pipelines and those applicable to existing high vapour pressure pipelines for which a certificate had been issued before 1 May 1983.

These regulations were also amended by the Records Retention Project (see below).

Gas Pipeline Regulations

These regulations were amended to redefine the term "pipeline" and to add a new section to require that gas being transported in a liquid state be transported in a pipeline designed and constructed in accordance with Part X of the Oil Pipeline Regulations.

These regulations were also amended by the Records Retention Project (see below).

Substituted Service Regulations

These regulations were approved by the Governor in Council in February 1983. The regulations, which complement the provisions of the NEB Act as amended by Bill C-60 (see above), provide for the service, other than personal service, of a notice on a landowner.

Gas Pipeline Uniform Accounting Regulations

Completely revised regulations, replacing those that came into effect in 1969, were approved by the Governor in Council in February.

These regulations were also amended by the Records Retention Project (see below).

Gas Export Prices Regulations

In April, the Governor in Council made the Gas Export Prices Regulations to prescribe the price of natural gas exported under the authority of the Part VI Regulations. These new regulations were a direct result of the Minister's announcement of a reduction in the export price effective 11 April 1983.

In July, the regulations were amended to incorporate a Volume-Related Incentive Pricing Program (VRIP). Under this scheme, exporters were able to sell quantities of natural gas in excess of an established base level at an incentive price of \$U.S. 3.17/gigajoule. Base volumes of gas exported continued to be sold at the uniform border price. The first period of the scheme was to extend from 6 July 1983 to 31 October 1983.

In October a further amendment was made to provide for the extension of the VRIP scheme from 1 November 1983 to 31 October 1984. Included in the amendments were a change in the definition of "base quantity", changes in actual base quantities and their applicability to certain licences for the new period, and several new sections that would permit specified exporters to

include an incentive price component for gas exported in each month.

Records Retention Project

In 1982, the Cabinet established new categories for the length of time the private sector was required to retain records kept pursuant to federal legislation. In 1983, six regulations under the National Energy Board and one under the Energy Administration Act were amended accordingly:

- Pipeline Companies Records Preservation Regulations
- Gas Pipeline Uniform Accounting Regulations
- Oil Pipeline Uniform Accounting Regulations
- Gas Pipeline Regulations
- Oil Pipeline Regulations
- National Energy Board Part VI Regulations
- Energy Administration Act Part III Regulations

Transportation Fuel Compensation Recovery Program

In his budget of 19 April 1983, the Honourable Marc Lalonde, Minister of Finance, announced that the Transportation Fuel Compensation Recovery Program would end on 1 May 1983. The following regulations and orders dealing with this program were approved by the Governor in Council late in April.

- (i) Under the National Energy Board Act
 - (a) *Export Price (Aviation Fuel) Regulations*

An amendment to these regulations abolished the minimum export price on aviation fuel effective 1 May 1983.

(b) *Part VI Regulations*

An amendment to these regulations abolished the requirement of an export licence for fuels acquired in Canada for consumption by aircraft and ships engaged in international transportation.

(ii) Under the Energy Administration Act

(a) *Marine Transportation Fuel Compensation Recovery Charge Regulations*

These regulations implemented Part I.1 of the Energy Administration Act with regard to marine fuel, retroactive to 1 May 1981.

(b) *Marine Transportation Fuel Exemption Order*

This order exempted specified exports of marine transportation fuel from the transportation fuel compensation recovery charge imposed under Part I.1 of the Energy Administration Act, retroactive to 1 May 1981.

(c) *Tariff of Charges for Exported Transportation Fuel Order — Amendment*

This tariff was invoked effective 1 May 1983 as part of the abolition of the TFCRC.

AMENDMENTS TO THE ENERGY ADMINISTRATION ACT REGULATIONS

The National Energy Board is responsible for administering the provisions of Parts I, I.1, and III of the Energy Administration Act. In addition to the regulations under these sections of the EAA which have already been mentioned above (see Records Retention Project and Transportation Fuel Compensation Recovery Program), the following regulations were amended.

Natural Gas Prices Regulations, 1982

These regulations, which fall under Part III of the Act, were amended a number of times during 1983 to account for, among other things, changes in prices paid for the sale of gas outside its province of production occasioned by changes in the "Alberta Border Price" and costs of transportation approved by the Board.

REGULATORY REFORM

During 1983 the Board undertook several initiatives in the area of regulatory reform. The most important of these follow.

1. In an effort to standardize and simplify its procedures, the Board proposed to replace its existing Rules of Practice and Procedure with new Rules of Procedure. In July the Board issued a draft of these rules for comment.

- The Board is reviewing the comments received from the parties who responded.
2. The Board is reviewing its information requirements for applications for pipeline and power line facilities under Sections 44 and 49 of the NEB Act.
- The Board intends to dispense with the guidelines set out in the Memorandum of Guidance issued 12 December 1963, which relates to the concept of Class A, B, and C types of pipeline construction. It is proposed that the only distinction between the types of applications will be based on the criteria set out in Sections 44 and 49 of the Act.
- With respect to pipeline applications pursuant to Section 44 of the Act, the Board proposes to amend Parts I and II of the Schedule to the Rules of Practice and Procedure, for gas and oil pipelines, respectively, to reflect current application practices.
- With respect to pipeline applications pursuant to Section 49 of the Act, the Board has prepared two new Parts, VIII and IX, of the Schedule to the Rules of Practice and Procedure, for gas and oil pipelines, respectively, which identify the information required to be filed by an applicant.
- A new Part X of the Rules of Practice and Procedure has also been prepared to reflect right-of-way information required to be filed by an applicant for applications
- pursuant to both Sections 44 and 49 of the Act.
- In June, the Board invited the comments of pipeline companies under its jurisdiction on a draft of the five parts mentioned above. Comments were received from a number of parties. As a result, in December the Board began meetings with companies to discuss their suggestions.
3. In September, the Board held a meeting with pipeline companies under its jurisdiction to discuss a draft document prepared by the Board on its approach to regulating companies under Part IV of the Act (tolls and tariffs). The draft was amended following written submissions from these companies.
- In November, the revised draft was sent to all interested parties who had appeared at Board toll and tariff hearings since January 1981.
4. The Board has proposed the concept of "Early Hearings", to give companies a forum for a preliminary assessment for major projects.
- The impetus for this approach arose from a recommendation in the report of the Horne Task Force on Pipeline Construction Costs, namely that sponsors be given the opportunity to have major projects subject to a preliminary assessment by the Board and the Government.
- Discussions on the proposal have already been held with Mobil Oil Canada Limited and partners in the Venture Project, Polar Gas, and The New Brunswick Electric Power
- Commission in connection with upcoming major applications to be filed by those bodies.
5. In October the Board sent to pipeline companies under its jurisdiction, and other interested parties draft Cost and Toll Information Regulations. These regulations which specify the information to be furnished by companies that construct and operate a pipeline, would replace the existing Toll Information Regulations, as well as the Board's Memorandum of Guidance of 21 October 1966.
6. The Board has initiated a review of the Oil Pipeline Regulations and the Gas Pipeline Regulations with a view to considering whether the two regulations could be consolidated.
- Comments on the regulations were solicited from pipeline companies under the Board's jurisdiction in April. Responses were still being examined as of year end.
7. The Board expects that safety regulations will be required for offshore pipelines. Representatives from the CSA, the Board, the Canadian Oil and Gas Lands Administration (COGLA), and Industry are working jointly on developing these regulations, a first draft of which is expected in the new year.
- At the same time staff of the Board and COGLA are involved in ensuring consistency and compatibility between the safety regulations of the two organizations.

-
8. In February the Board proposed amendments to the information required with applications for electrical certificates and licences. This information is currently found in Part III of the Schedule to the Rules of Practice and Procedure and in the Part VI Regulations respectively. The comments of parties are being examined.

Organization of the National Energy Board

There were no changes of substance in the organization of the Board in 1983, which is shown in the organization chart. For the fiscal year 1983-84 the Board's budget is \$25.2 million with a person-year allocation of 462. The Board provides service to the public in both official languages.

Executive Director

The Executive Director is responsible for the day-to-day administration of the Board, including the acquisition and allocation of human and financial resources and efforts aimed at achieving the ensurance of efficiency and effectiveness in Board activities and operations. The Director of Projects and Plans is responsible for strengthening the effectiveness of staff support, particularly for public hearings and planning, and coordinating work of staff teams to meet the requirements of the Panels.

Director General, Energy Studies

The Director General, Energy Studies, is responsible for ensuring effective coordination and synthesis of all matters relating to energy demand, supply, and surplus. He coordinates major energy studies, which are broad in scope and involve a wide range of disciplines, and inquiries respecting energy supply, demand and surplus under Part II of the NEB Act. He oversees the integration of information and processing systems and services for the Board.

Administrative Services Branch

The Administrative Services Branch is responsible for the coordination and administration of

policies and the provision of advice and services in areas of finance, personnel, general administration, official languages, and security. The Board also has responsibility for the administration of the collection of oil export charges.

Economics Branch

The Economics Branch advises the Board on economic and socio-economic matters, long-term energy demand, and macro-economic forecasting for the Canadian economy. The Branch also maintains an energy statistics unit.

The Branch analyses the impact of proposed energy projects on the Canadian economy, on regional economies, and on the net economic benefit to Canadians. It also considers the socio-economic impact of such projects and assesses the extent to which Canadians will have an opportunity to participate in projects ("Canadian Content").

Electric Power Branch

The Electric Power Branch is responsible for electric export licensing, international power line certification, and regulatory surveillance. The Branch also prepares supply and demand forecasts for electricity for use in dealing with electrical or other applications, keeps under review the United States market for electricity, and provides advice to the Board on matters relating to the production, transportation, sale and exchange of electricity over which the federal government has jurisdiction.

Energy Supply Branch

The Energy Supply Branch is

responsible for advising the Board on matters of oil and gas exploration, drilling and production, forecasting trends in oil and gas supply from conventional, oil sands, and synthetic sources. The Branch independently calculates the reserves and deliverability of gas and the reserves and producibility of oil. The Calgary office of the Energy Supply Branch is engaged in the individual pool calculation of gas and oil reserves.

Financial Regulatory Branch

The Financial Regulatory Branch has the prime responsibility for rates, tolls and tariffs under Part IV, of the NEB Act and Part II of the Northern Pipeline Act, financial advice in relation to Parts II, III, and VI of the NEB Act and the audit of petroleum export charges and costs of transportation related to Parts I and III of the Energy Administration Act. It also is responsible for the auditing of the accounts of pipeline companies under the Board's jurisdiction and for monitoring the financial performance of pipelines.

Gas Branch

The Gas Branch is the focal point for all gas and gas product related regulatory activity pursuant to Part VI of the NEB Act and for the monitoring and control of all matters associated with the Board's obligations for the administration of Domestic Gas Pricing under Part III of the Energy Administration Act. The Branch also plays a supportive role in all regulatory activity with respect to gas and gas products pursuant to Parts II, III and IV of the NEB Act.

Law Branch

The Law Branch is responsible for advising the Board on its powers and their legal application to the Canadian energy industries under the Board's jurisdiction, including the possible effect of the application of such powers.

Office of the Secretary

The Office of the Secretary provides administrative control and coordination of all matters brought formally before the Board or panels of the Board, prepares and maintains custody of agenda, minutes, statutory documents, and other official Board records, receives and issues all communications of the Board, and provides the Board with public communications services, a library information centre, as well as drafting, graphic arts, and typesetting facilities.

Oil Branch

The Oil Branch is responsible for providing advice in the general area of oil-related energy matters, including export charges, crude oil and petroleum product export licensing, control of international oil exchanges, allocation of domestic crude oil, questions of oil markets, processing, distribution, and the short-term balance of supply and demand for feedstocks and oil products. These are matters within the ambit of Parts I and II of the Energy Administration Act and Parts II, IV and VI of the NEB Act.

Pipelines Branch

The Pipelines Branch is principally responsible for matters relating to pipeline certificates issued under

Part III of the NEB Act. It is the principal source of advice to the Board on capital and operating costs, engineering, safety, right-of-way and environmental matters pursuant to the Board's responsibilities in respect of pipelines under Parts II, IV, V and VI of the NEB Act and under the Northern Pipeline Act. The Branch is also responsible for regulating all pipeline facilities under the Board's jurisdiction with respect to safety, environmental matters and certificate conditions. This is accomplished mainly through regular inspection programs.

Systems Development Branch

The Systems Development Branch is responsible for computer systems services, word processing support and data processing support to the Board including consultative service on computer operation, data management and program design and development. It also provides an advisory service to ensure the availability and introduction of the latest data processing techniques and applications and the provision of computer hardware and software sufficient for and corresponding to the Board's operational environment.

OFFICE OF THE EXECUTIVE DIRECTOR

| | |
|-------------------|--------------------------------------|
| R. St.G. Stephens | Executive Director |
| J.S. Klenavic | Director, Projects and Plans |
| G.H. Shaw | Manager, Program Planning and Review |
| W. Ganim | Chief, Internal Audit |

ENERGY STUDIES

| | |
|--------------|------------------|
| K.W. Vollman | Director General |
|--------------|------------------|

ADMINISTRATIVE SERVICES BRANCH

| | |
|----------------|------------------------------------|
| S.H. Goldstein | Director |
| N. Grace | Assistant Director, Administration |
| M.J. McNamara | Assistant Director, Finance |
| J.L. Thompson | Assistant Director, Personnel |

ECONOMICS BRANCH

| | |
|-------------------|--|
| P.L. Miles | Director |
| R.E. Jackson, Jr. | A/Assistant Director, Economic Analysis |
| J.S. Oh | Assistant Director, Regulatory Economics and Energy Statistics |
| (vacant) | Assistant Director, Forecasting and Energy Market Analysis |

ELECTRIC POWER BRANCH

| | |
|--------------|--------------------------------|
| E.S. Bell | Director |
| A.N. Karas | Assistant Director, Planning |
| T. Olszewski | Assistant Director, Operations |

ENERGY SUPPLY BRANCH

| | |
|------------|---|
| W.A. Hiles | Director |
| E. Kutney | Assistant Director, Geology and Reserves |
| K. Poole | Assistant Director, Gas Supply |
| G.C. Hos | Assistant Director, Oil and Alternative Energy Supply |

FINANCIAL REGULATORY BRANCH

| | |
|--------------|--|
| D.D. Epp | Director |
| C.M. Yeates | Assistant Director, Research and Special Studies |
| G.S. Johnson | Assistant Director, Gas |
| A. Brown | A/Assistant Director, Oil |
| J.W. Bigelow | Chief Auditor, Northern Pipelines |

GAS BRANCH

| | |
|----------------|--|
| S.R. Ironstone | Director |
| A.L. Browne | Assistant Director, Gas Industry and Market Analysis |
| R.S. Green | Assistant Director, Gas Regulations and Licences |

LAW BRANCH

| | |
|------------------|---------------------------|
| F.H. Lamar, Q.C. | General Counsel |
| (vacant) | Assistant General Counsel |

OFFICE OF THE SECRETARY

| | |
|-----------------|-----------------------|
| G. Yorke Slader | Secretary |
| I. Melzer | A/Assistant Secretary |

OIL BRANCH

| | |
|----------------|--------------------------------|
| P.G. Scotchmer | Director |
| B.P. Leakey | Assistant Director, Evaluation |
| R.B. Stevens | Assistant Director, Operations |

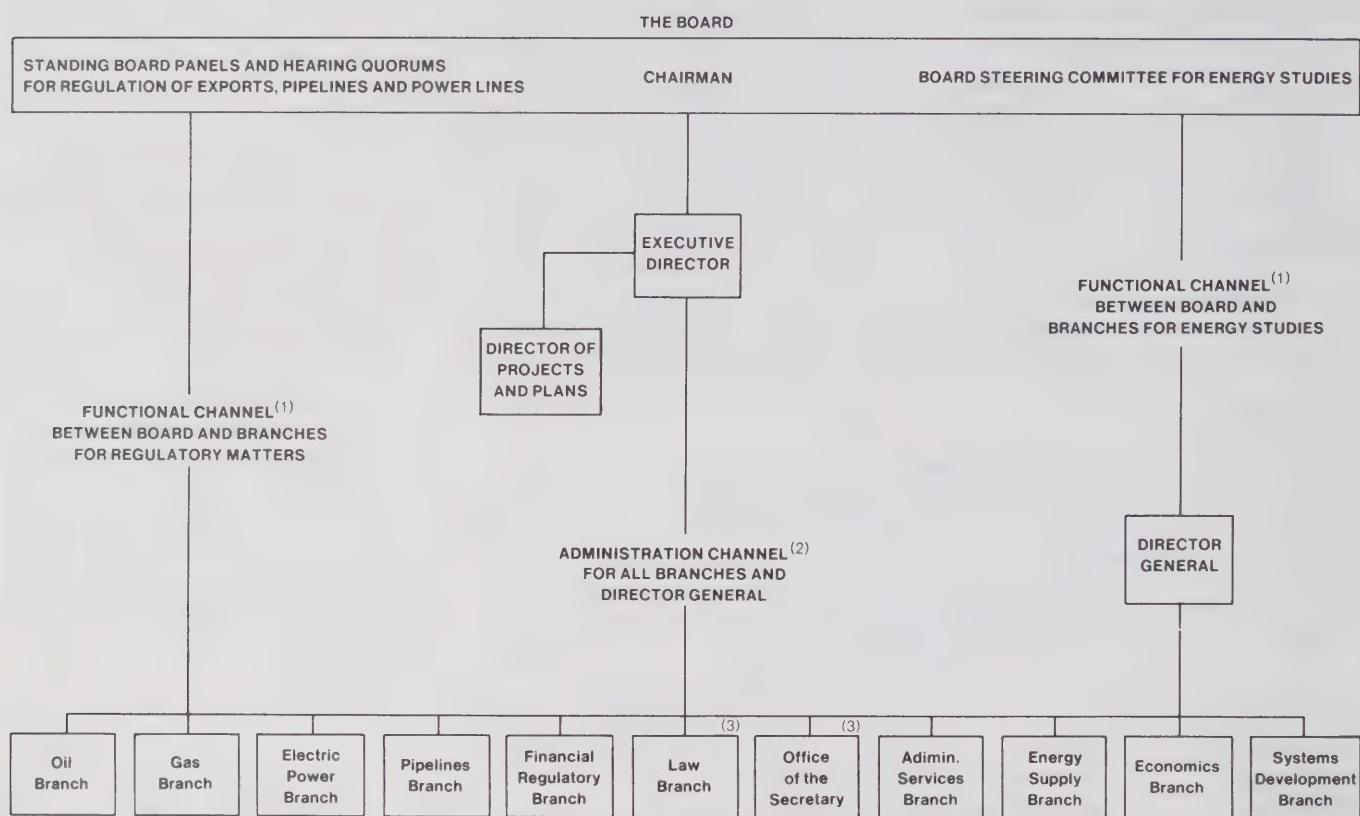
PIPELINES BRANCH

| | |
|----------------|--|
| T.S. Shwed | Director |
| G.G. Perreault | A/Assistant Director, Engineering |
| P.A. Carr | Assistant Director, Environment and Right-of-Way |
| E.L.M. Gordon | Assistant Director, Construction and Operations |

SYSTEMS DEVELOPMENT BRANCH

| | |
|-------------|--|
| D. Emmens | Director |
| K.E. Begley | Assistant Director, Systems and Operations |
| K.S. Song | Assistant Director, Planning and Data Base |

NATIONAL ENERGY BOARD ORGANIZATION CHART



(1) Functional means pertaining to activities having a primary relationship to the Board's statutory duties.

(2) Administration means pertaining to activities primarily concerned with management of the Board's staff and the provision of human and financial resources.

(3) The Secretary and General Counsel have quasi-legal duties and report directly to the Chairman on certain matters.

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CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY FOR GAS PIPELINES ISSUED DURING 1983

No certificates issued during 1983

G-II

ORDERS RELATING TO NEW GAS PIPELINE FACILITIES ISSUED DURING 1983 CLASS "B" CONSTRUCTION

| APPLICANT | ORDER NO. | ISSUED | FACILITIES | ESTIMATED COST |
|--|-----------|----------|--|----------------|
| Many Islands Pipe Lines (Canada) Limited | XG-6-83 | 83-07-08 | Sales tap assembly | \$ 20,000 |
| TransCanada PipeLines Limited | XG-1-83 | 83-03-16 | Vaudreuil Sales Meter Station and works | \$ 318,000 |
| TransCanada PipeLines Limited | G-4-83 | 83-07-13 | Brighton sales tap delivery point facility | \$ 77,000 |
| TransCanada PipeLines Limited | XG-5-83 | 83-07-13 | Val Gagné sales tap delivery point facility | \$ 96,000 |
| TransCanada PipeLines Limited | XG-7-83 | 83-07-13 | Sabrevois Sales Meter Station | \$ 1,183,000 |
| TransCanada PipeLines Limited | XG-9-83 | 83-10-19 | Beauharnois Sales Meter Station | \$ 440,000 |
| TransCanada PipeLines Limited | XG-11-83 | 83-12-20 | Compressors and replacement pipe in Compressor Station No. 209 | \$ 1,650,000 |
| Trans Québec & Maritimes Pipeline Inc. | XG-2-83 | 83-06-15 | Saint-Maurice Meter Station and works | \$ 1,690,000 |
| Trans Québec & Maritimes Pipeline Inc. | XG-3-83 | 83-06-15 | l'Assomption Meter Station and works | \$ 316,000 |
| Westcoast Transmission Company Limited | XG-8-83 | 83-10-12 | Tumbler Ridge Meter Station No. 60 | \$ 176,700 |
| Westcoast Transmission Company Limited | XG-10-83 | 83-11-09 | Hixon Meter Station No. 61 | \$ 60,000 |

G-II (cont'd)

ORDERS RELATING TO NEW GAS PIPELINE FACILITIES ISSUED DURING 1983 CLASS "C" CONSTRUCTION

| APPLICANT | ORDER NO. | ISSUED | FACILITIES | ESTIMATED COST |
|--|-----------|----------|--|----------------|
| Alberta Natural Gas Company Ltd. | XGM-3-83 | 83-01-26 | Pipeline modifications | 999,565 |
| Alberta Natural Gas Company Ltd. | XGM-4-83 | 83-02-09 | Ball valve installation | 313,525 |
| Foothills Pipelines (Alta.) Ltd. | | | Sask.-Compressor station projects, meter station modifications, helicopter fuel facilities, tools and work equipment | 1,843,200 |
| Foothills Pipelines (North B.C.) Ltd. | | | Recycle line at compressor station 394 | 451,000 |
| Foothills Pipelines (Sask.) Ltd. | XGM-9-83 | 83-06-03 | Alta.-Compressor stations, corrosion, creek crossing | 519,300 |
| Foothills Pipelines (South B.C.) Ltd. | | | SBC-Valve stem extensions, electronic real time measurement | 258,000 |
| Foothills Pipelines (South Yukon) Ltd. | | | All—Leasehold improvements, office furniture and equipment, transportation tools and work equipment | 5,263,900 |
| ICG Transmission Holdings Ltd. | XGM-1-83 | 83-01-12 | Meter station replacement facilities | 27,083 |
| ICG Transmission Holdings Ltd. | XGM-8-83 | 83-04-13 | Pipeline replacement, lowering drain, land and land rights, clean-up of easement and right-of-way agreement | 47,400 |
| Minell Pipeline Ltd. | XGM-7-83 | 83-04-13 | Contingencies | 5,000 |
| TransCanada PipeLines Limited | XGM-5-83 | 83-02-16 | Pipe replacement, corrosion protection, station modifications, buildings, etc. | 65,164,992 |
| TransCanada PipeLines Limited | XGM-6-83 | 83-03-09 | Remote control modifications, installation of water filters | 1,057,114 |
| TransCanada PipeLines Limited | XMG-10-83 | 83-04-26 | Station modifications, buildings | 2,376,392 |
| TransCanada PipeLines Limited | XGM-19-83 | 83-11-09 | Pipeline modifications | 350,000 |
| Trans Québec & Maritimes Pipeline Inc. | XGM-16-83 | 83-10-12 | Pipe replacement, corrosion protection, buildings, etc. | 974,887 |
| Trans Québec & Maritimes Pipeline Inc. | XGM-21-83 | 83-12-20 | Access road, turbine | 123,425 |
| Westcoast Transmission Company Limited | XGM-2-83 | 83-01-19 | Additional plant facilities and modifications, hydraulic truck crane, etc. | 471,000 |

G-II (cont'd)

ORDERS RELATING TO NEW GAS PIPELINE FACILITIES ISSUED DURING 1983 CLASS "C" CONSTRUCTION

| APPLICANT | ORDER NO. | ISSUED | FACILITIES | ESTIMATED COST |
|--|-----------|----------|--|----------------|
| Westcoast Transmission Company | XGM-11-83 | 83-06-08 | Pipe replacement, station improvement, corrosion protection, communication upgrading, processing and sulphur plant upgrading, warehouse-office-mobile and aviation equipment, etc. | \$ 21,339,100 |
| Westcoast Transmission Company Limited | XGM-12-83 | 83-06-22 | Compressor station and plant additions and modifications, office and mobile equipment, etc. | 3,976,000 |
| Westcoast Transmission Company Limited | XGM-13-83 | 83-06-29 | Communications, compressor station and plant additions and modifications, mobile and office equipment | 1,867,000 |
| Westcoast Transmission Company Limited | XGM-14-83 | 83-07-13 | Airport, fuel gas system station, boiler control system, retube sulphur condenser, reaction furnace crossover | 5,117,000 |
| Westcoast Transmission Company Limited | XGM-15-83 | 83-08-17 | Line break controls | 2,114,000 |
| Westcoast Transmission Company Limited | XGM-17-83 | 83-10-12 | Pipe replacement, corrosion protection, compressors and works, radio facilities, fencing, valves, fire protection-emergency-mobile equipment, etc. | 3,038,200 |
| Westcoast Transmission Company Limited | XGM-18-83 | 83-10-12 | Valve operators, emergency systems and modifications, compressors and works, generators, control panel upgrade, relocation of meter station, slug catcher, condenser, analyzers, replace cooler motors, monitors, recorders, instrumentation, micrographic-data processing-office equipment, building modification, etc. | 4,611,200 |
| Westcoast Transmission Company Limited | XGM-20-83 | 83-11-16 | Process Valves | 418,000 |

G-III

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1983

| TYPE OF ORDER | LICENSEE | LICENCE NUMBER | POINT OF EXPORT | TERM OF ORDER | | MAXIMUM EXPORT VOLUMES (10 ⁶ m ³) |
|---------------------------------|---|----------------|---------------------------------|---------------|------------|--|
| | | | | FROM | TO | |
| New Natural Gas Export Licences | 1 Pan-Alberta Gas Ltd. | GL-65 | Kingsgate, B.C. | 86-11-01 | 92-10-31 | 7 462.4 |
| | 2 Pan-Alberta Gas Ltd. | GL-66 | Moncton, Sask. | 86-11-01 | 92-10-31 | 24 874.9 |
| | 3 Alberta & Southern Gas Co. Ltd. | GL-67 | Kingsgate, B.C. | 86-11-01 | 92-10-31 | 20 619.1 |
| | 4 Alberta & Southern Gas Co. Ltd. | GL-68 | Kingsgate, B.C. | 86-11-01 | 92-10-31 | 4 237.5 |
| | 5 Alberta & Southern Gas Co. Ltd. | GL-69 | Kingsgate, B.C. | 87-11-01 | 92-10-31 | 7 646.4 |
| | 6 Canadian-Montana Pipe Line Company | GL-70 | Niagara Falls, Ont. | 86-11-01 | 92-10-31 | 814.1 |
| | 7 Canadian-Montana Pipe Line Company | GL-71 | Niagara Falls, Ont. | 89-11-01 | 92-10-31 | 206.7 |
| | 8 Canadian-Montana Pipe Line Company | GL-72 | Aldergrove, Alta. | 86-01-01 | 92-10-31 | 1 085.7 |
| | 9 Columbia Gas Development of Canada Ltd. | GL-74 | Moncton, Sask. | 86-01-01 | 92-10-31 | 1 981.3 |
| | 10 Consolidated Natural Gas Limited | GL-75 | Moncton, Sask. Emerson, Man. | 87-11-01 | 89-10-31 | 2 792.0 |
| | 11 Dome Petroleum Limited | GL-76 | Port Simpson Bay, B.C. | 86-04-01 | 2001-03-31 | 62 761.0 |
| | 12 KannGaz Producers Ltd. | GL-77 | Niagara Falls, Ont. | 84-11-01 | 96-10-31 | 13 567.0 |
| | 13 Niagara Gas Transmission Limited | GL-78 | Cornwall, Ont. | 87-11-01 | 92-10-31 | 1 099.7 |
| | 14 ProGas Limited | GL-79 | Emerson, Man. Moncton, Sask. | 87-11-01 | 89-10-31 | 1 860.0 |
| | 15 ProGas Limited | GL-80 | Niagara Falls, Ont. | 84-11-01 | 96-10-31 | 5 442.1 |
| | 16 ProGas Limited | GL-81 | Emerson, Man. | 83-11-01 | 95-10-31 | 20 196.7 |
| | 17 Sulpetro Limited | GL-82 | Niagara Falls, Ont. | 83-11-01 | 91-10-31 | 4 653.7 |
| | 18 TransCanada PipeLines Limited | GL-83 | Niagara Falls, Ont. | 84-11-01 | 94-10-31 | 9 350.2 |
| | 19 TransCanada PipeLines Limited | GL-84 | Niagara Falls, Ont. | 84-11-01 | 94-10-31 | 5 054.4 |
| | 20 TransCanada PipeLines Limited | GL-85 | Niagara Falls, Ont. | 84-11-01 | 94-10-31 | 10 108.8 |
| | 21 TransCanada PipeLines Limited | GL-86 | Emerson, Man. | 84-11-01 | 96-10-31 | 10 886.4 |

G-III (cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1983

| TYPE OF ORDER | LICENSEE | LICENCE NUMBER | POINT OF EXPORT | TERM OF ORDER | | MAXIMUM EXPORT VOLUMES (10^6 m^3) |
|---------------------------------|--|----------------|--|---------------|----------|---|
| | | | | FROM | TO | |
| New Natural Gas Export Licences | 22. TransCanada PipeLines | GL-87 | Emerson, Man. | 84-11-01 | 96-10-31 | 10 886.4 |
| | 23. TransCanada PipeLines Limited | GL-88 | Emerson, Man. Niagara Falls, Ont. | 84-11-01 | 96-10-31 | 16 329.6 |
| | 24. TransCanada PipeLines Limited | GL-89 | Emerson, Man. | 84-11-01 | 92-10-31 | 12 960.8 |
| | 25. TransCanada PipeLines Limited | GL-90 | Niagara Falls, Ont. | 85-11-01 | 97-10-31 | 5 443.2 |
| | 26. Transcontinental Gas Pipe Line Corporation | GL-91 | Niagara Falls, Ont. | 84-11-01 | 96-10-31 | 16 329.6 |
| | 27. Union Gas Limited | GL-92 | Windsor, Ont. | 85-11-01 | 92-10-31 | 1 703.7 |
| | 28. WestCoast Transmission Company Limited | GL-93 | Huntingdon, B.C. | 89-11-01 | 95-10-31 | 13 958.5 |
| | 29. Westcoast Transmission Company Limited | GL-94 | Huntingdon, B.C. Kingsgate, B.C. Monchy, Sask. | 89-11-01 | 92-10-31 | 9 269.5 |
| | 30. Pan-Alberta Gas Ltd. | GL-95 | Niagara Falls, Ont. | 84-11-01 | 96-10-31 | 16 604.7 |
| New Ethane Export Orders | There were no ethane export orders issued during 1983. | | | | | |
| New Ethylene Export Orders | There were no ethylene export orders issued during 1983. | | | | | |
| New Propane Export | 1. Amoco Canada Petroleum Company Ltd. | EPR-928-83 | Sarnia, Ont. | 83-08-01 | 83-09-30 | 16 000 m^3 |
| | 2. Amoco Canada Petroleum Company Ltd. | EPR-929-83 | Sarnia, Ont. | 83-11-01 | 84-10-31 | 18 476 m^3 |
| New Butanes Export Orders | 1. Amoco Canada Petroleum Company Ltd. | EBU-928-83 | Sarnia, Ont. | 83-11-01 | 84-10-31 | Not specified |

G-III (cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1983

| TYPE OF ORDER | LICENSEE | ORDER NUMBER | DATE OF ISSUE | COMMENTS |
|--|---|--------------|---------------|--|
| Orders Amending Existing Natural Gas Export Licences | 1. Alberta and Southern Gas Co. Ltd. | AO-17-GL-3 | 83-04-07 | Amendment establishing that the price to be charged for gas exports is \$U.S. 4.10/GJ as outlined in the Gas Export Prices Regulations. |
| | 2. Westcoast Transmission Company Limited | AO-18-GL-4 | 83-03-10 | Amendment establishing daily operating tolerances of two and one half percent of the daily authorized quantity during any 24-hour period. |
| | 3. Westcoast Transmission Company Limited | AO-19-GL-4 | 83-04-07 | See item 1. |
| | 4. Canadian-Montana Pipe Line Company | AO-20-GL-5 | 83-04-07 | See item 1. |
| | 5. Alberta & Southern Gas Co. Ltd. | AO-14-GL-16 | 83-04-07 | See item 1. |
| | 6. Canadian-Montana Pipe Line Company | AO-19-GL-17 | 83-04-07 | See item 1. |
| | 7. TransCanada PipeLines Limited | AO-27-GL-18 | 83-01-13 | Amendment extending the removal of the daily export limitations to 83-10-31 and establishing Niagara Falls, Ontario as an additional export point to 83-10-31. |
| | 8. TransCanada PipeLines Limited | AO-28-GL-18 | 83-06-16 | Amendment extending the term of the licence from 89-11-01 to 90-10-31 so as to permit the licensee the opportunity to deliver certain quantities of natural gas paid for but not taken by its export customer. |
| | 9. TransCanada PipeLines Limited | AO-29-GL-18 | 83-04-07 | See item 1. |
| | 10. TransCanada PipeLines Limited | AO-21-GL-19 | 83-04-07 | See item 1. |
| | 11. TransCanada PipeLines Limited | AO-29-GL-20 | 83-01-13 | Amendment extending the removal of the daily export limitation to 83-10-31. |
| | 12. TransCanada Pipelines Limited | AO-30-GL-20 | 83-06-16 | Amendment extending the term of the licence from 91-11-01 to 92-10-31 so as to permit the licensee the opportunity to deliver certain quantities of natural gas paid for but not taken by its export customer. |
| | 13. TransCanada PipeLines Limited | AO-31-GL-20 | 83-04-07 | See item 1. |
| | 14. Alberta & Southern Gas Co. Ltd. | AO-16-GL-24 | 83-03-08 | Amendment establishing an increase in the daily, annual and term quantities of natural gas that may be exported under the licence. |
| | 15. Alberta & Southern Gas Co. Ltd. | AO-17-GL-24 | 83-04-07 | See item 1. |
| | 16. Canadian-Montana Pipe Line Company | AO-21-GL-25 | 83-03-08 | See item 14. |
| | 17. Canadian-Montana Pipe Line Company | AO-22-GL-25 | 83-04-07 | See item 1. |
| | 18. ICG Transmission Holdings Ltd. | AO-16-GL-28 | 83-04-07 | See item 1. |

G-III (cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1983

| TYPE OF ORDER | LICENSEE | ORDER NUMBER | DATE OF ISSUE | COMMENTS |
|--|--|--------------|---------------|---|
| Orders Amending Existing Natural Gas Export Licences | 19. ICG Transmission Holdings Ltd. | AO-17-GL-29 | 83-04-07 | See item 1. |
| | 20. Alberta & Southern Gas Co. Ltd. | AO-14-GL-35 | 83-03-08 | See item 14. |
| | 21. Alberta & Southern Gas Co. Ltd. | AO-15-GL-35 | 83-04-07 | See item 1. |
| | 22. Canadian-Montana Pipe Line Company | AO-18-GL-36 | 83-04-07 | See item 1. |
| | 23. TransCanada PipeLines Limited | AO-22-GL-37 | 83-01-13 | See item 11. |
| | 24. TransCanada PipeLines Limited | AO-23-GL-37 | 83-06-16 | Amendment extending the term of the licence from 90-11-01 to 91-10-31 so as to permit the licensee the opportunity to deliver certain quantities of natural gas paid for but not taken by its export customer. |
| | 25. TransCanada PipeLines Limited | AO-24-GL-37 | 83-04-07 | See item 1. |
| | 26. TransCanada PipeLines Limited | AO-14-GL-38 | 83-06-16 | See item 24. |
| | 27. TransCanada PipeLines Limited | AO-15-GL-38 | 83-04-07 | See item 1. |
| | 28. TransCanada PipeLines Limited | AO-14-GL-39 | 83-06-16 | See item 24. |
| | 29. TransCanada PipeLines Limited | AO-15-GL-39 | 83-04-07 | See item 1. |
| | 30. Westcoast Transmission Company Limited | AO-26-GL-41 | 83-03-08 | Amendment establishing an increase in the daily, annual and term quantities of natural gas that may be exported under the licence and establishing Kingsgate, B.C. as an additional export point. |
| | 31. Westcoast Transmission Company Limited | AO-27-GL-41 | 83-04-07 | See item 1. |
| | 32. TransCanada PipeLines Limited | AO-21-GL-43 | 83-03-31 | Amendment removing condition 6 of the licence which required the licensee to file monthly schedules showing volumes of natural gas exported for fuel and other related uses in the transmission of natural gas for Licences GL-18, GL-20, GL-21, GL-37 and GL-42. |
| | 33. TransCanada PipeLines Limited | AO-22-GL-43 | 83-04-07 | See item 1. |
| | 34. Canadian-Montana Pipe Line Company | AO-5-GL-52 | 83-03-08 | See item 14. |
| | 35. Canadian-Montana Pipe Line Company | AO-6-GL-52 | 83-04-07 | See item 1. |
| | 36. Canadian-Montana Pipe Line Company | AO-4-GL-53 | 83-04-07 | See item 1. |

G-III (cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1983

| TYPE OF ORDER | LICENSEE | ORDER NUMBER | DATE OF ISSUE | COMMENTS |
|--|---|--------------|---------------|--|
| Orders Amending Existing Natural Gas Export Licences | 37. Columbia Gas Development of Canada Ltd. | AO-5-GL-54 | 83-03-08 | Amendment establishing an increase in the daily, annual and term quantity of natural gas that may be exported under the licence and establishing Monchy, Sask. as the export point for such additional quantities. |
| | 38. Columbia Gas Development of Canada Ltd. | AO-6-GL-54 | 83-04-07 | See item 1. |
| | 39. Niagara Gas Transmission Limited | AO-3-GL-55 | 83-03-08 | See item 14. |
| | 40. Niagara Gas Transmission Limited | AO-4-GL-55 | 83-04-07 | See item 1. |
| | 41. ProGas Limited | AO-4-GL-56 | 83-03-08 | Amendment establishing an increase in the daily and annual quantities of natural gas that may be exported under the licence. |
| | 42. ProGas Limited | AO-5-GL-56 | 83-04-07 | See item 1. |
| | 43. Sulpetro Limited | AO-7-GL-57 | 83-01-13 | Amendment removing the limitation on the quantity of natural gas that may be exported on any one day during the period 82-11-01 to 83-10-31. |
| | 44. Sulpetro Limited | AO-8-GL-57 | 83-04-07 | See item 1. |
| | 45. Sulpetro Limited | AO-9-GL-57 | 83-10-24 | Amendment extending the term of the licence from 83-11-01 to 84-02-29 so as to permit the licensee the opportunity to deliver certain quantities of natural gas paid for but not taken by its export customer. |
| | 46. Pan-Alberta Gas Ltd. | AO-4-GL-58 | 83-03-08 | See item 14. |
| | 47. Pan-Alberta Gas Ltd. | AO-5-GL-58 | 83-04-07 | See item 1. |
| | 48. Pan-Alberta Gas Ltd. | AO-4-GL-59 | 83-03-08 | See item 14. |
| | 49. Pan-Alberta Gas Ltd. | AO-5-GL-59 | 83-04-07 | See item 1. |
| | 50. TransCanada PipeLines Limited | AO-3-GL-60 | 83-04-07 | See item 1. |
| | 51. Consolidated Natural Gas Limited | AO-6-GL-61 | 83-03-08 | See item 14. |
| | 52. Consolidated Natural Gas Limited | AO-7-GL-61 | 83-04-07 | See item 1. |

G-III (cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1983

| TYPE OF ORDER | LICENSEE | ORDER NUMBER | DATE OF ISSUE | COMMENTS |
|--|---|--------------|---------------|---|
| Orders Amending Existing Natural Gas Export Licences | 53. Canadian-Montana Pipe Line Company | AO-3-GO-3-79 | 83-04-07 | See item 1. |
| | 54. Pan-Alberta Gas Ltd. | AO-2-GL-62 | 83-04-07 | See item 1. |
| | 55. Pan-Alberta Gas Ltd. | AO-2-GL-63 | 83-03-08 | Amendment establishing a decrease in the daily, annual and term quantities of natural gas that may be exported under the licence. |
| | 56. Pan-Alberta Gas Ltd. | AO-3-GL-63 | 83-04-07 | See item 1. |
| | 57. Union Gas Limited | AO-2-GL-64 | 83-04-07 | See item 1. |
| | 58. Pan-Alberta Gas Ltd. | AO-1-GL-65 | 83-04-07 | See item 1. |
| | 59. Pan-Alberta Gas Ltd. | AO-1-GL-66 | 83-04-07 | See item 1. |
| | 60. Alberta & Southern Gas Co. Ltd. | AO-1-GL-67 | 83-04-07 | See item 1. |
| | 61. Alberta & Southern Gas Co. Ltd. | AO-1-GL-68 | 83-04-07 | See item 1. |
| | 62. Alberta & Southern Gas Co. Ltd. | AO-1-GL-69 | 83-04-07 | See item 1. |
| | 63. Canadian-Montana Pipe Line Company | AO-1-GL-70 | 83-04-07 | See item 1. |
| | 64. Canadian-Montana Pipe Line Company | AO-1-GL-71 | 83-04-07 | See item 1. |
| | 65. Canadian-Montana Pipe Line Company | AO-1-GL-72 | 83-04-07 | See item 1. |
| | 66. Columbia Gas Development of Canada Ltd. | AO-1-GL-74 | 83-04-07 | See item 1. |
| | 67. Consolidated Natural Gas Limited | AO-1-GL-75 | 83-04-07 | See item 1. |

G-III (cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1983

| TYPE OF ORDER | LICENSEE | ORDER NUMBER | DATE OF ISSUE | COMMENTS |
|--|--------------------------------------|--------------|---------------|--|
| Orders Amending Existing Natural Gas Export Licences | 68. KannGaz Producers Ltd. | AO-1-GL-77 | 83-04-07 | See item 1. |
| | 69. Niagara Gas Transmission Limited | AO-1-GL-78 | 83-04-07 | See item 1. |
| | 70. ProGas Limited | AO-1-GL-79 | 83-04-07 | See item 1. |
| | 71. ProGas Limited | AO-1-GL-80 | 83-04-07 | See item 1. |
| | 72. ProGas Limited | AO-1-GL-81 | 83-04-07 | See item 1. |
| | 73. Sulpetro Limited | AO-1-GL-82 | 83-04-07 | See item 1. |
| | 74. TransCanada PipeLines Limited | AO-1-GL-83 | 83-04-07 | See item 1. |
| | 75. TransCanada PipeLines Limited | AO-2-GL-83 | 83-06-23 | Amendment extending the term of the licence to 96-10-31 and changing the daily and annual quantities of natural gas which may be exported under the licence. |
| | 76. TransCanada PipeLines Limited | AO-1-GL-84 | 83-04-07 | See item 1. |
| | 77. TransCanada PipeLines Limited | AO-1-GL-85 | 83-04-07 | See item 1. |
| | 78. TransCanada PipeLines Limited | AO-1-GL-86 | 83-04-07 | See item 1. |
| | 79. TransCanada PipeLines Limited | AO-1-GL-87 | 83-04-07 | See item 1. |
| | 80. TransCanada PipeLines Limited | AO-1-GL-88 | 83-04-07 | See item 1. |

G-III (cont'd)

NEW LICENCES AND ORDERS TO EXPORT NATURAL GAS, ETHANE, ETHYLENE, PROPANE AND BUTANES IN 1983

| TYPE OF ORDER | LICENSEE | ORDER NUMBER | DATE OF ISSUE | COMMENTS |
|--|--|--------------|---------------|--|
| Orders Amending Existing Natural Gas Export Licences | 81. TransCanada PipeLines Limited | AO-1-GL-89 | 83-04-07 | See item |
| | 82. Trans Canada PipeLines Limited | AO-1-GL-90 | 83-04-07 | See item 1. |
| | 83. Transcontinental Gas Pipe Line Corporation | AO-1-GL-91 | 83-04-07 | See item 1. |
| | 84. Union Gas Limited | AO-1-GL-92 | 83-04-07 | See item 1. |
| | 85. Westcoast Transmission Company Limited | AO-1-GL-93 | 83-04-07 | See item 1. |
| | 86. Westcoast Transmission Company Limited | AO-1-GL-94 | 83-04-07 | See item 1. |
| | 87. Pan-Alberta Gas Ltd. | AO-1-GL-95 | 83-04-07 | See item 1. |
| Orders Amending Existing Ethane Export Licences | 1. Dome Petroleum Limited | AO-6-GL-47 | 83-01-06 | Amendment establishing the minimum price for ethane exports to be not less than an amount calculated in accordance with a pricing formula contained in the agreement dated 73-01-08 as amended 81-11-19. |
| | 2. Dome Petroleum Limited | AO-7-GL-47 | 83-03-24 | Amendment extending terms outlined in the 81-11-19 amending agreement. |
| | 3. Dome Pétroleum Limited | AO-8-GL-47 | 83-09-08 | Amendment establishing a minimum pricing provision for ethane exports. |
| | 4. Dome Petroleum Limited | AO-2-GL-51 | 83-01-06 | See item 1. |
| | 5. Dome Petroleum Limited | AO-3-GL-51 | 83-03-24 | See item 2. |
| | 6. Dome Petroleum Limited | AO-4-GL-51 | 83-09-08 | See item 3. |
| Orders Amending Existing Ethylene, Propane and Butanes Licences and Orders | During 1983, there were no amending orders to existing ethylene, propane and butanes licences or orders. | | | |

G-IV

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1983

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM EXPORT VOLUMES | | |
|---|------------------------------|--|---|---|--|---|---|
| | | | FROM | TO | DAILY (10 ³ m ³) | ANNUAL (10 ⁶ m ³) | TERM (10 ⁶ m ³) |
| NATURAL GAS | | | | | | | |
| 1. Alberta & Southern Gas Co. Ltd. | GL-3 (AO-17) | Kingsgate, B.C. | 61-10-31 86-10-31 | 86-10-30 87-10-31 | 12 995.4 3 248.9 | 4 341.8 1 085.5 | 109 467.8 |
| 2. Westcoast Transmission Company Limited | GL-4 (AO-19) | Kingsgate, B.C. | 61-12-10 81-12-10 82-11-01 84-11-01 85-11-01 86-11-01 | 81-12-09 82-10-31 84-10-31 85-10-31 86-10-31 87-10-31 | 4 305.8 4 305.8 4 305.8 3 229.4 2 152.9 1 076.5 | 1 444.7 1 300.0 1 444.7 1 083.5 722.4 361.2 | 35 250.9 |
| 3. Canadian-Montana Pipe Line Company | GL-5 (AO-20) ^(a) | Cardston, Alta. Emerson, Man. Niagara Falls, Ont. Aden, Alta. | 61-10-31 86-10-31 76-05-11 | 86-10-30 87-10-31 79-12-31 | 1 019.8 255.0 (b) | 310.2 77.6 (b) | 7 832.3 |
| 4. Alberta & Southern Gas Co. Ltd. | GL-16 (AO-14) | Kingsgate, B.C. | 66-11-01 67-11-01 | 67-10-31 89-10-31 | 3 204.6 6 409.2 | 1 059.9 2 119.8 | 45 721.1 |
| 5. Canadian-Montana Pipe Line Company | GL-17 (AO-19) ^(a) | Cardston, Alta. Emerson, Man. Niagara Falls, Ont. Aden, Alta. | 66-11-01 67-11-01 76-05-11 | 67-10-31 89-10-31 79-12-31 | 339.9 679.9 (b) | 103.4 206.8 (b) | 4 652.8 |
| 6. TransCanada PipeLines Limited | GL-18 (AO-29) ^(d) | Emerson, Man. Niagara Falls, Ont. | 65-11-01 66-11-01 (89-11-01 78-12-07 81-11-01 79-10-18 80-06-05 81-11-01 83-05-10 | 66-10-31 89-10-31 90-10-31 ^(r) 81-10-31 82-10-31 79-12-16 81-10-31 82-10-31 83-10-31 | 708.2 4 277.5 4 277.5 N/A N/A (e) | 226.6 ^(c) 1 481.5 1 481.5 ^(r) 1 481.5 1 481.5 1 481.5 (e) | 33 993.4 |
| 7. TransCanada PipeLines Limited | GL-19 (AO-21) | Philipsburg, Qué. | 65-11-01 82-11-01 83-11-01 84-11-01 85-11-01 86-11-01 | 82-10-31 83-10-31 84-10-31 85-10-31 86-10-31 89-10-31 | 600.6 634.5 657.2 679.9 702.5 725.2 | 184.1 184.1 184.1 184.1 184.1 184.1 | 3 059.4 |
| 8. TransCanada PipeLines Limited | GL-20 (AO-31) ^(d) | Emerson, Man. | 67-11-01 (91-11-01 78-12-07 81-11-01 | 91-10-31 92-10-31 ^(r) 81-10-31 82-10-31 | 2 662.8 2 662.8 N/A N/A | 909.3 909.3 ^(r) 909.3 909.3 | 21 670.8 |
| 9. TransCanada PipeLines Limited | GL-21 (AO-7) ^(f) | Emerson, Man. | 68-11-05 | 91-10-31 | N/S | 7 019.1 | 169 967.0 |
| 10. Alberta & Southern Gas Co. Ltd. | GL-24 (AO-17) | Kingsgate, B.C. | 68-11-01 69-11-01 91-11-01 91-11-01 | 69-10-31 91-10-31 92-10-31 92-10-31 | 3 427.7 6 685.4 4 784.6 3 835.6 | 1 102.0 2 206.7 1 577.4 1 263.4 | 52 491.0 |
| 11. Canadian-Montana Pipe Line Company | GL-25 (AO-22) ^(a) | Cardston, Alta. Emerson, Man. Niagara Falls, Ont. | 68-11-01 69-11-01 91-11-01 92-11-01 | 69-10-31 91-10-31 92-10-31 93-10-31 | 339.9 679.9 439.0 390.9 | 103.4 206.8 133.6 119.0 | 4 905.4 |

G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1983

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM EXPORT VOLUMES | | |
|--|-------------------------------|---|--|--|--|---|---|
| | | | FROM | TO | DAILY (10 ³ m ³) | ANNUAL (10 ⁶ m ³) | TERM (10 ⁶ m ³) |
| NATURAL GAS | | Aden, Alta. ^(g) | 73-03-27 74-05-14 75-05-14 76-05-14 76-05-11 | 74-05-14 75-05-14 76-05-14 77-05-14 79-12-31 | 2 817.5 2 817.5 2 817.5 1 408.7 (b) | 563.5 563.5 283.3 141.6 (b) | |
| 12. ICG Transmission Holdings Ltd. | GL-28 (AO-16) | Sprague, Man. | 70-11-01 | 95-10-31 | 80.3 | 9.5 | 229.0 |
| 13. ICG Transmission Holdings Ltd. | GL-29 (AO-17) | Fort Frances, Ont. | 70-11-01 | 95-10-31 | 915.6 | 218.5 | 5 462.2 |
| 14. ICG Transmission Holdings Ltd. | GL-30 (AO-3) ^(h) | Sprague, Man. | 70-11-01 | 95-10-31 | 1 321.8 | 344.0 | 8 498.1 |
| 15. Alberta and Southern Gas Co. Ltd. | GL-35 (AO-15) | Kingsgate, B.C. | 70-11-01 | 87-10-31 | 5 807.2 | 1 912.1 | 32 506.2 |
| 16. Canadian-Montana Pipe Line Company | GL-36 (AO-18) | Cardston, Alta. (a) Aden, Alta. Emerson, Man. Niagara Falls, Ont. Cardston, Alta. | 70-11-01 85-11-01 86-11-01 76-05-11 82-03-04 | 85-10-31 86-10-31 87-10-31 79-12-31 82-10-31 | 339.9 170.0 85.0 (b) 339.9 | 103.4 51.7 25.9 (b) 103.4 | 1 628.5 |
| 17. TransCanada PipeLines Limited | GL-37 (AO-24 ^(d)) | Emerson, Man. | 70-11-01 (90-11-01 78-12-07 81-11-01 | 90-10-31 (91-10-31 ^(r) 81-10-31 82-10-31 | 5 546.6 5 546.6 N/A N/A | 2 030.1 2 030.1) 2 030.1 2 030.1 | 40 601.0 |
| 18. TransCanada PipeLines Limited | GL-38 (AO-15) | Emerson, Man. | 70-11-01 (90-11-01 | 90-10-31 (91-10-31 ^(r) | 1 416.4 1 416.4 | 518.4 518.4) | 10 368.0 |
| 19. TransCanada PipeLines Limited | GL-39 (AO-15) | Emerson, Man | 70-11-01 (90-11-01 | 90-10-31 (91-10-31 ^(r) | 204.0 204.0 | 74.6 74.6) | 1 493.0 |
| 20. Westcoast Transmission Company Limited | GL-41 (AO-27) | Huntingdon, B.C. Kingsgate, B.C. ⁽ⁱ⁾ Monchy, Sask. ^(j) | 71-11-01 72-11-01 80-11-01 83-04-01 83-11-01 73-11-01 83-04-01 82-11-01 83-04-01 | 72-10-31 80-10-31 83-03-31 83-10-31 89-10-31 79-10-31 89-10-31 83-03-31 89-10-31 | 20 773.9 22 922.9 ⁽ⁱ⁾ 24 622.6 26 039.0 26 039.0 2 832.8 1 274.8 1 416.4 | 7 223.1 7 970.3 7 970.3 ⁽ⁱ⁾ 4 706.2 8 067.8 N/S 419.5 517.0 | 143 495.2 |

G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1983

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM EXPORT VOLUMES | | |
|---|--|---|--|--|---|---|---|
| | | | FROM | TO | DAILY (10 ³ m ³) | ANNUAL (10 ⁶ m ³) | TERM (10 ⁶ m ³) |
| NATURAL GAS | | | | | | | |
| 21. TransCanada PipeLines Limited | GL-42 (AO-3) ^(l) | Emerson, Man. | 71-04-15 71-11-01 | 71-10-31 94-10-31 | N/S N/S | 323.8 2 612.3 | 60 316.5 |
| 22. TransCanada PipeLines Limited | GL-43 (AO-22) | Emerson, Man. | 71-11-01 | 91-10-31 | N/S | 481.6 | 9 631.5 |
| 23. Consolidated Natural Gas Limited | GL-44 ^(k) | Emerson, Man. | 72-03-15 | 92-10-31 | 4 249.2 | 1 274.8 | 18 951.3 |
| 24. Tenneco LNG Inc. | GL-49 | St. Stephen, N.B. | (l) | (l) | 32 295.0 | 11 820.0 | (l) |
| 25. Canadian-Montana Pipe Line Company | GL-52 (AO-6) | Aden, Alta. Emerson, Man. ^(a) Niagara Falls, Ont. Aden, Alta. | 80-01-01 83-04-01 82-03-04 | 83-03-31 87-12-31 82-10-31 | 1 416.4 1 133.1 1 416.4 | 283.3 283.3 283.3 | 2 266.4 |
| 26. Canadian-Montana Pipe Line Company | GL-53 (AO-4) ^(m) (a) | Cardston, Alta. Emerson, Man. & Niagara Falls, Ont. | 86-07-01 86-11-01 | 86-10-31 87-10-31 | 340.0 170.0 | 34.5 51.7 | 86.2 |
| 27. Columbia Gas Development of Canada Ltd. | GL-54 (AO-6) | Monchy, Sask. | 83-04-01 84-01-01 | 83-12-31 87-12-31 | 1 450.0 1 450.0 | 387.7 517.0 | 3 556.1 |
| | | Huntingdon, B.C. | 80-01-01 81-11-01 82-01-01 | 80-10-31 81-12-31 83-03-31 | 1 110.4 1 450.0 1 450.0 | 368.3 70.8 423.5 | |
| 28. Niagara Gas Transmission Limited | GL-55 (AO-4) | Cornwall, Ont. | 80-01-01 82-11-01 83-04-01 83-11-01 85-11-01 | 82-10-31 83-03-31 83-10-31 85-10-31 87-10-31 | 350.0 350.0 1 200.0 1 200.0 1 200.0 | 89.1 37.1 145.8 250.0 275.0 | 1 500.2 |
| 29. ProGas Limited | GL-56 (AO-5) ⁽ⁿ⁾ | Emerson, Man. and Monchy, Sask. (Combined Maximum) | 80-11-01 85-11-01 86-11-01 | 85-10-31 86-10-31 87-10-31 | 9 440.9 7 552.7 5 664.5 | 3 100.0 2 480.0 1 860.0 | 17 050.0 |
| | | Maximums permitted at Monchy, Sask. as part of combined Emerson/Monchy Volumes | 81-11-01 82-11-01 84-11-01 85-11-01 86-11-01 | 82-10-31 84-10-31 85-10-31 86-10-31 87-10-31 | 2 613.7 4 849.4 6 457.6 6 797.4 5 098.1 | 954.0 1 770.0 2 357.0 2 480.0 1 860.0 | (10 100.7) |
| 30. Sulpetro Limited | GL-57 (AO-9) | Niagara Falls, Ont. | 80-01-01 80-11-01 82-11-01 82-11-04 83-11-01 | 80-10-31 82-10-31 82-11-03 83-10-31 84-02-29 | 2 089.1 ^(o) 2 089.1 ^(o) 2 125.0 2 125.0 2 125.0 | 612.8 762.5 608.4 ^(o) 608.4 ^(o) 170.0 | 1 869.6 |

G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1983

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM EXPORT VOLUMES | | |
|--|-----------------------------|--|--|---|--|---|---|
| | | | FROM | TO | DAILY (10 ³ m ³) | ANNUAL (10 ⁶ m ³) | TERM (10 ⁶ m ³) |
| NATURAL GAS | | | | | | | |
| 31. Pan-Alberta Gas Ltd. | GL-58 (AO-5) | Monchy, Sask. | 81-11-01 84-11-01 85-11-01 86-11-01 87-11-01 | 84-10-31 85-10-31 86-10-31 87-10-31 88-10-31 | 24 928.5 18 696.4 12 464.3 19 837.2 24 928.5 | 8 294.4 6 220.8 4 147.2 6 600.4 8 294.4 | 50 146.0 |
| 32. Pan-Alberta Gas Ltd. | GL-59 (AO-5) | Kingsgate, B.C. | 80-11-01 84-11-01 85-11-01 86-11-01 87-11-01 | 84-10-31 85-10-31 86-10-31 87-10-31 88-10-31 | 7 478.6 5 608.9 3 739.3 1 869.0 7 478.6 | 2 488.3 1 866.2 1 244.2 622.1 2 488.3 | 16 174.0 |
| 33. TransCanada PipeLines Limited | GL-60 (AO-3) | Emerson, Man. | 80-01-01 80-11-01 84-11-01 85-11-01 | 80-10-31 84-10-31 85-10-31 85-12-14 | 6 317.1 ^(p) 6 317.1 ^(p) 4 737.8 3 158.6 | 800.0 2 096.3 1 572.2 139.0 | 10 896.4 |
| 34. Consolidated Natural Gas Limited | GL-61 (AO-7) ⁽ⁿ⁾ | Emerson, Man. and Monchy, Sask. (Combined maximum) | 80-11-01 85-11-01 86-11-01 | 85-10-31 86-10-31 87-10-31 | 5 665.6 ^(q) 4 532.5 3 824.3 | 2 067.9 1 654.0 1 396.0 | 13 389.6 |
| | | Maximum permitted at Monchy, Sask. as part of combined Emerson/Monchy volumes. | 81-11-01 84-11-01 85-11-01 86-11-01 | 84-10-31 85-10-31 86-10-31 87-10-31 | 3 232.9 ^(q) 3 891.1 3 682.6 2 620.3 | 1 180.0 1 438.4 1 344.0 956.5 | (7 278.9) |
| 35. Pan-Alberta Gas Ltd. | GL-62 (AO-2) | Monchy, Sask. | 84-11-01 85-11-01 86-11-01 | 85-10-31 86-10-31 87-10-31 | 6 232.1 12 464.2 5 091.3 | 2 073.6 4 147.2 1 694.0 | 7 914.8 |
| 36. Pan-Alberta Gas Ltd. | GL-63 (AO-3) | Kingsgate, B.C. | 80-11-01 83-11-01 85-11-01 86-11-01 | 83-10-31 85-10-31 86-10-31 87-10-31 | 931.5 1 869.7 3 739.4 5 609.6 | 340.0 622.1 1 244.1 1 866.2 | 4 354.5 |
| 37. Union Gas Limited | GL-64 (AO-2) | Windsor, Ont. | 80-11-01 | 85-10-31 | 1 100.0 | 284.0 | 1 420.0 |
| 38. Canadian-Montana Pipe Line Company | GO-3-79 (AO-3) | Reagan Fields, Alta. | 79-05-01 | 93-12-31 | 30.0 | 10.3 | 105.0 |
| 39. Pan-Alberta Gas Ltd. | GL-65 (AO-1) | Kingsgate, B.C. | 88-11-01 90-11-01 91-11-01 (92-11-01) | 90-10-31 91-10-31 92-10-31 93-10-31 ^(r) | 7 478.6 4 980.7 2 490.7 7 478.6 | 2 488.3 1 657.2 828.6 2 488.3) | 7 462.4 |
| 40. Pan-Alberta Gas Ltd. | GL-66 (AO-1) | Monchy, Sask. | 88-11-01 90-11-01 91-11-01 (92-11-01) | 90-10-31 91-10-31 92-10-31 93-10-31 ^(r) | 24 928.5 16 602.4 8 301.2 24 928.5 | 8 294.4 5 524.1 2 762.0 8 294.4) | 24 874.9 |
| 41. Alberta & Southern Gas Co. Ltd. | GL-67 (AO-1) | Kingsgate, B.C. | 86-11-01 87-11-01 90-11-01 91-11-01 | 87-10-31 ^(s) 90-10-31 91-10-31 92-10-31 | 12 995.4 12 995.4 8 654.9 4 327.5 | 3 256.3 4 341.8 2 891.6 1 445.8 | 20 619.1 |

G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1983

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM EXPORT VOLUMES | | |
|---|-------------------------|--|--|--|---|--|---|
| | | | FROM | TO | DAILY (10 ³ m ³) | ANNUAL (10 ⁶ m ³) | TERM (10 ⁶ m ³) |
| NATURAL GAS | | | | | | | |
| 42. Alberta & Southern Gas Co. Ltd. | GL-68 (AO-1) | Kingsgate, B.C. | 89-11-01 90-11-01 91-11-01 | 90-10-31 91-10-31 92-10-31 | 6 409.2 4 268.5 2 134.3 | 2 119.8 1 411.8 705.9 | 4 237.5 |
| 43. Alberta & Southern Gas Co. Ltd. | GL-69 (AO-1) | Kingsgate, B.C. | 87-11-01 90-11-01 91-11-01 | 90-10-31 91-10-31 92-10-31 | 5 807.2 3 867.6 1 933.8 | 1 912.1 1 273.4 636.7 | 7 646.4 |
| 44. Canadian-Montana Pipe Line Company | GL-70 (AO-1) | Niagara Falls, Ont. | 86-11-01 87-11-01 90-11-01 91-11-01 | 87-10-31 90-10-31 91-10-31 92-10-31 | 637.4 509.9 339.6 169.8 | 193.9 155.1 103.3 51.6 | 814.1 |
| 45. Canadian-Montana Pipe Line Company | GL-71 (AO-1) | Niagara Falls, Ont. | 89-11-01 90-11-01 91-11-01 | 90-10-31 91-10-31 92-10-31 | 340.0 226.4 113.2 | 103.4 68.9 34.4 | 206.7 |
| 46. Canadian-Montana Pipe Line Company | GL-72 (AO-1) | Aden, Alta. | 88-01-01 88-11-01 90-11-01 91-11-01 | 88-10-31 90-10-31 91-10-31 92-10-31 | 1 133.1 1 133.1 754.6 377.3 | 236.1 283.3 188.7 94.3 | 1 085.7 |
| 47. Columbia Gas Development of Canada Ltd. | GL-74 (AO-1) | Monchy, Sask. | 88-01-01 88-11-01 90-11-01 91-11-01 | 88-10-31 90-10-31 91-10-31 92-10-31 | 1 450.0 1 450.0 965.7 482.8 | 430.8 517.0 344.3 172.2 | 1 981.3 |
| 48. Consolidated Natural Gas Limited | GL-75 (AO-1) | Monchy, Sask. and Emerson, Man. Combined Maximum | 87-11-01 | 89-10-31 | 3 824.3 | 1 396.0 | 2 792.0 |
| | | Maximums permitted at Monchy, Sask. as part of combined Emerson/Monchy volumes | 87-11-01 | 89-10-31 | 1 912.2 | 698.0 | (1 396.0) |
| 49. Dome Petroleum Limited | GL-76 | Point west of Port Simpson Bay, B.C. | 86-04-01 87-01-01 88-01-01 89-01-01 90-01-01 2001-01-01 | 86-12-31 87-12-31 88-12-31 89-12-31 2000-12-31 2001-03-31 | N/S N/S N/S N/S N/S N/S | 2 258.0 3 309.0 3 986.0 4 136.0 4 362.0 1 090.0 | 62 761.0 |
| 50. KannGaz Producers Ltd. | GL-77 (AO-1) | Niagara Falls, Ont. | 84-11-01 93-11-01 94-11-01 95-11-01 (96-11-01) | 93-10-31 94-10-31 95-10-31 96-10-31 97-10-31 ^(r) | 3 540.0 2 655.0 1 770.0 885.0 3 540.0 | 1 292.1 969.1 646.0 323.0 1 292.1) | 13 567.0 |
| 51. Niagara Gas Transmission Limited | GL-78 (AO-1) | Cornwall, Ont. | 87-11-01 90-11-01 91-11-01 | 90-10-31 91-10-31 92-10-31 | 1 200.0 799.2 399.2 | 275.0 183.1 91.6 | 1 099.7 |

G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1983

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM EFFORT VOLUMES | | |
|---|-------------------------|--|----------------------------|-------------------------|--|---|---|
| | | | FROM | TO | DAILY (10 ³ m ³) | ANNUAL (10 ⁶ m ³) | TERM (10 ⁶ m ³) |
| NATURAL GAS | | | | | | | |
| 52. ProGas Limited | GL-79 (AO-1) | Emerson, Man. and Monchy, Sask. Combined Maximum | 87-11-01 | 88-10-31 | 3 776.4 | 1 240.0 | 1 860.0 |
| | | | 88-11-01 | 89-10-31 | 1 888.2 | 620.0 | |
| 53. ProGas Limited | GL-80 (AO-1) | Maximums permitted at Monchy, Sask. as part of Emerson/Monchy volumes | 87-11-01 | 88-10-31 | 3 398.8 | 1 240.0 | 1 674.0 |
| | | | 88-11-01 | 89-10-31 | 1 699.4 | 620.0 | |
| 54. ProGas Limited | GL-81 (AO-1) | Niagara Falls, Ont. | 84-11-01 | 93-10-31 | 1 420.0 | 518.3 | 5 442.1 |
| | | | 93-11-01 | 94-10-31 | 1 065.0 | 388.7 | |
| 55. Sulpetro Limited | GL-82 (AO-1) | 94-11-01 95-11-01 (96-11-01) | 95-10-31 | 710.0 | 259.1 | | |
| | | | 96-10-31 | 355.0 | 129.6 | | |
| 56. TransCanada PipeLines Limited | GL-83 (AO-2) | Niagara Falls, Ont. | (97-10-31 ^(t)) | 1 420.0 | 518.3) | | |
| | | | 83-11-01 | 87-10-31 | 5 270.0 | 1 923.5 | 20 196.7 |
| 57. TransCanada PipeLines Limited | GL-84 (AO-1) | Niagara Falls, Ont. | 92-11-01 | 93-10-31 | 3 952.5 | 1 442.6 | |
| | | | 93-11-01 | 94-10-31 | 2 635.0 | 961.7 | |
| 58. TransCanada PipeLines Limited | GL-85 (AO-1) | Niagara Falls, Ont. | 94-11-01 | 95-10-31 | 1 317.5 | 480.9 | |
| | | | (95-11-01) | 96-10-31 ^(t) | 5 270.0 | 1 923.5) | |
| 59. TransCanada PipeLines Limited | GL-86 (AO-1) | Emerson, Man. | 84-11-01 | 86-10-31 | 2 125.0 | 775.6 | 4 653.7 |
| | | | 86-11-01 | 88-10-31 | 1 700.0 | 620.5 | |
| 60. TransCanada PipeLines Limited | GL-87 (AO-1) | Niagara Falls, Ont. | 88-11-01 | 89-10-31 | 1 275.0 | 465.4 | |
| | | | 89-11-01 | 90-10-31 | 850.0 | 310.2 | |
| | | (91-11-01) | 91-10-31 | 425.0 | 155.1 | | |
| | | | 92-10-31 ^(t) | 2 125.0 | 775.6) | | |
| | | 84-11-01 | 93-10-31 | 1 133.1 | 414.0 | 9 350.2 | |
| | | | 86-11-01 | 94-10-31 | 2 620.3 | 959.0 | |
| | | 94-11-01 | 95-10-31 | 1 521.3 | 556.8 | | |
| | | | 95-11-01 | 96-10-31 | 774.3 | 283.4 | |
| | | (96-11-01) | 97-10-31 ^(t) | 2 620.3 | 959.0) | | |
| | | | 84-11-01 | 93-10-31 | 1 416.4 | 518.4 | 5 054.4 |
| | | 93-11-01 | 94-10-31 | 1 062.3 | 388.8 | | |
| | | | (94-11-01) | 95-10-31 ^(t) | 1 416.4 | 518.4) | |
| | | 84-11-01 | 93-10-31 | 2 832.8 | 1 036.8 | 10 108.8 | |
| | | | 93-11-01 | 94-10-31 | 2 124.6 | 777.6 | |
| | | (94-11-01) | 95-10-31 ^(t) | 2 832.8 | 1 036.8) | | |
| | | | 84-11-01 | 93-10-31 | 2 832.8 | 1 036.8 | 10 886.4 |
| | | 93-11-01 | 94-10-31 | 2 124.6 | 777.6 | | |
| | | | 94-11-01 | 95-10-31 | 1 416.4 | 518.4 | |
| | | 95-11-01 | 96-10-31 | 708.2 | 259.2 | | |
| | | | (96-11-01) | 97-10-31 ^(t) | 2 832.2 | 1 036.8) | |
| | | 84-11-01 | 93-10-31 | 2 832.8 | 1 036.8 | 10 886.4 | |
| | | | 93-11-01 | 94-10-31 | 2 124.6 | 777.6 | |
| | | 94-11-01 | 95-10-31 | 1 416.4 | 518.4 | | |
| | | | 95-11-01 | 96-10-31 | 708.2 | 259.2 | |
| | | (96-11-01) | 97-10-31 ^(t) | 2 832.8 | 1 036.8) | | |

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CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1983

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM EXPORT VOLUMES | | |
|--|-------------------------|---|--|--|--|---|---|
| | | | FROM | TO | DAILY (10 ³ m ³) | ANNUAL (10 ⁶ m ³) | TERM (10 ⁶ m ³) |
| NATURAL GAS | | | | | | | |
| 61. TransCanada PipeLines Limited | GL-88 (AO-1) | Emerson, Man. and/or Niagara Falls, Ont. | 84-11-01 93-11-01 94-11-01 95-11-01 (96-11-01) | 93-10-31 94-10-31 95-10-31 96-10-31 97-10-31 ^(t) | 4 249.2 3 186.9 2 124.6 1 062.3 4 249.2 | 1 555.2 1 166.4 777.6 388.8 1 555.2) | 16 329.6 |
| 62. TransCanada PipeLines Limited | GL-89 (AO-1) | Emerson, Man. | 84-11-01 85-11-01 86-11-01 90-11-01 91-11-01 (92-11-01) | 85-10-31 ^(t) 86-10-31 90-10-31 91-10-31 92-10-31 93-10-31 ^(t) | 6 317.1 6 317.1 6 317.1 4 207.2 2 103.6 6 317.1 | 542.1 1 957.3 2 096.3 1 396.1 698.1 2 096.3) | 12 960.8 |
| 63. TransCanada PipeLines Limited | GL-90 (AO-1) | Niagara Falls, Ont. | 85-11-01 94-11-01 95-11-01 96-11-01 (97-11-01) | 94-10-31 95-10-31 96-10-31 97-10-31 98-10-31 ^(t) | 1 416.4 1 062.3 708.2 354.1 1 416.4 | 518.4 388.8 259.2 129.6 518.4) | 5 443.2 |
| 64. Transcontinental Gas Pipe Line Corporation | GL-91 (AO-1) | Niagara Falls, Ont. ^(u) | 84-11-01 93-11-01 94-11-01 95-11-01 | 93-10-31 94-10-31 95-10-31 96-10-31 | 8 498.4 6 373.8 4 249.2 2 124.6 | 1 555.2 1 166.4 777.6 388.8 | 16 329.6 |
| 65. Union Gas Limited | GL-92 (AO-1) | Windsor, Ont. | 85-11-01 90-11-01 91-11-01 (92-11-01) | 90-10-31 91-10-31 92-10-31 93-10-31 ^(t) | 1 100.0 732.6 366.3 1 100.0 | 284.0 189.1 94.6 284.0) | 1 703.7 ^(v) |
| 66. Westcoast Transmission Company Limited | GL-93 (AO-1) | Huntingdon, B.C. | 89-11-01 92-11-01 93-11-01 94-11-01 | 92-10-31 93-10-31 94-10-31 95-10-31 | 8 498.3 6 373.7 4 249.1 2 124.6 | 3 101.9 2 326.4 1 550.9 775.5 | 13 958.5 |
| 67. Westcoast Transmission Company Limited | GL-94 (AO-1) | Huntingdon, B.C., Kingsgate, B.C. and Monchy, Sask. Combined Maximum | 89-11-01 90-11-01 91-11-01 | 90-10-31 91-10-31 92-10-31 | 13 731.0 9 144.8 4 572.4 | 4 637.1 3 088.3 1 544.1 | 9 269.5 |
| | | Maximums permitted at Monchy, Sask. as part of combined Huntingdon/Kingsgate/Monchy Volumes | 89-11-01 90-11-01 91-11-01 | 90-10-31 91-10-31 92-10-31 | 1 416.4 1 416.4 1 416.4 | 517.0 517.0 517.0 | |

G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1983

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM EXPORT VOLUMES | | |
|--------------------------|-------------------------|---|--|--|--|--------------------------------------|---------------------------|
| | | | FROM | TO | DAILY (10^3 m 3) | ANNUAL (10^6 m 3) | TERM (10^6 m 3) |
| NATURAL GAS | | Maximums permitted at Kingsgate, B.C. as part of combined Huntingdon/Kingsgate/Monchy Volumes | 89-11-01 90-11-01 91-11-01 | 90-10-31 91-10-31 92-10-31 | 2 832.8 2 832.8 2 832.8 | N/S N/S N/S | |
| 68. Pan-Alberta Gas Ltd. | GL-95 (AO-1) | Niagara Falls, Ont. | 84-11-01 93-11-01 94-11-01 95-11-01 | 93-10-31 94-10-31 95-10-31 96-10-31 | 4 332.5 3 249.4 2 166.2 1 083.1 | 1 581.4 1 186.0 790.7 395.4 | 16 604.7 |

- (a) Emerson, Man. and Niagara Falls Ont. were added as additional export points to GL-5, GL-17, GL-25 & GL-53 effective November 1, 1982 and to GL-36, and GL-52 for the period March 4, 1982 to October 31, 1982.
- (b) Notwithstanding the named point of export at Cardston, Alta., gas was allowed to be exported at Aden, Alta., provided the combined volume exported at Aden under Licences GL-5, GL-17, GL-25 and GL-36 did not exceed $2 817.5 \times 10^3$ m 3 /d or 563.5×10^6 m 3 /a during the period 1976-05-11 to 1979-12-31.
- (c) Interruptible. Note that the figure of 226.6×10^6 m 3 represents the permitted short-term exports from 1965-11-01 to 1968-10-31.
- (d) During the period 1980-11-01 to 1983-10-31, the Licensee is authorized to export additional volumes in excess of the daily maximum under Licences GL-18, GL-20 and GL-37, such additional volumes being subject to interruption to satisfy Canadian and export customers for sales and transportation services. The annual combined quantity of these interruptible volumes under the three licences shall not exceed $1 983.0 \times 10^6$ m 3 during the period 1980-11-01 to 1981-10-31, and $1 400.0 \times 10^6$ m 3 during the periods 1981-11-01 to 1982-10-31 and 1983-05-10 to 1983-10-31.
- (e) Notwithstanding the named point of export at Emerson, Manitoba, the Licensee was authorized to export gas on an interruptible basis at Niagara Falls, Ontario. From 1970-10-18 to 1979-12-16, the Licensee was allowed to export gas via Niagara Falls to a maximum of $3 400.0 \times 10^3$ m 3 /day or 119.0×10^6 m 3 /a, while from 1980-06-05 to 1980-10-31, the permitted maximum at this point of export was $2 125 \times 10^3$ m 3 /day.
- (f) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste Marie and Sarnia, Ontario to serve the Eastern Canadian market.
- (g) Exports of gas were authorized to be exported at Aden, Alta., commencing on the day when the total term quantity of gas authorized by Licence GL-8 was exported.
- (h) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ont.
- (i) The Licensee is authorized to export an average annual quantity of $7 970.3 \times 10^6$ m 3 or a maximum of $8 389.8 \times 10^6$ m 3 , in any consecutive 12-month period ending on the 31st day of October.
- (j) Notwithstanding the named point of export at Huntingdon, B.C., gas was allowed to be exported at Kingsgate, B.C. during the period 1973-11-01 to 1979-10-31. From 1982-11-01/1983-03-31, volumes authorized through Monchy, Sask. under this Licence are additional to the daily and annual volumes authorized to be exported at Huntingdon, B.C.
- (k) The quantity of gas exported at Emerson, Man. under this licence shall equal the quantities of gas which the Licensee imports near Willow Creek, Sask. pursuant to Licence GLI-5.
- (l) Commences on the date of Initial Delivery and expires in 201/2 years after the date of the First Regular Delivery or a total term not exceeding 25 years from Initial Delivery. The total term volume of exports or equivalent quantity expressed in cubic metres of the LNG imported pursuant to Licence GLI-7.
- (m) The quantity of gas that may be exported in any consecutive 12-month period ending on the 31st day of October under Licence GL-53, together with the combined quantity of gas that may be exported under Licence GL-25 shall not exceed 206.8×10^6 m 3 .
- (n) During each licence year over the period 1981-11-01/1987-10-31 the maximum exports allowed at Emerson, Manitoba are equal to the combined Emerson/Monchy point of export less the actual volumes exported at Monchy, Saskatchewan.
- (o) The Licence may exceed the daily limitation of $2 089.1 \times 10^3$ m 3 /d during the period 1980-11-01 to 1982-11-03 and $2 125 \times 10^3$ m 3 /d during the period 1982-11-04 to 1983-10-31 subject to interruption to provide sales and transportation service for TransCanada's domestic and export customers. The quantity of gas exported during the period 1982-11-01 to 1983-10-31 may not exceed the lesser of 612.8×10^6 m 3 or the difference between the term volume and the total quantity of gas exported to 1982-10-31.
- (p) During the period 1980-01-01 to 1981-05-14, the total quantity of gas that may be exported in any one day shall not exceed the difference between $6 317.1 \times 10^3$ m 3 and the quantity of gas exported under Licence GL-1 on that day.
- (q) For the period 1982-11-04 to 1983-10-31 an additional daily volume for $2 832.8 \times 10^3$ m 3 /d may be exported at the combined Emerson and Monchy export points, of which a maximum additional daily volume of $2 432.7 \times 10^3$ m 3 /d may be exported at the Monchy export point, subject to interruption to meet Canadian and other export requirements.
- (r) Authorized volumes shown for this period only, covers the gas paid for but not taken during the term of this licence.
- (s) During the period 1986-11-01 to 1987-10-31, the total quantity of gas that may be exported in any one day shall not exceed the difference between $12 995.4 \times 10^3$ m 3 and the quantity of gas exported under Licence GL-3 on that day.
- (t) During the period 1984-11-01 to 1985-12-14, the total quantity of gas that may be exported in any one day shall not exceed the difference between $6 317.1 \times 10^3$ m 3 and the quantity of gas exported under Licence GL-60 on that day.
- (u) This licence authorizes the export of gas imported and stored in Canada.
- (v) The total quantity shall not exceed the total energy equivalent quantity of methane-rich synthetic gas delivered by Petrosar to the Licensee under their Methane-Rich Synthetic Gas Sales Agreement, dated the 20th day of November, 1974.

N/A Denotes Not Applicable

N/S Denotes Not Specified

G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1983

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM VOLUMES (m ³) |
|--|-----------------------------|--|--|--|--|
| | | | FROM | TO | |
| PROPANE | | | | | |
| 1. Dome Petroleum Limited | GL-31 (AO-7) | Any point on the international boundary between Canada and the United States | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 | 716 983 688 571 656 190 620 476 133 254 133 254 133 254 133 254 143 809 193 016 196 984 169 047 165 873 165 079 162 098 103 968 |
| 2. Amoco Canada Petroleum Company Ltd. | GL-32 (AO-5) | Any point on the international boundary between Canada and the United States | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 | 92 698 92 698 77 206 |
| 3. PanCanadian Gas Products Ltd. | GL-34 (AO-6) | Any point on the international boundary between Canada and the United States | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 | 63 730 63 730 63 730 63 730 63 730 63 730 63 730 53 175 3 968 |
| 4. Dome Petroleum Limited | GL-46 (AO-5) ^(a) | Any point on the international boundary between Canada and the United States | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 619 047 601 587 547 619 468 254 535 000 535 000 |

G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1983

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM VOLUMES (m ³) |
|--|---------------------------|--|--------------------------|----------|-----------------------------------|
| | | | FROM | TO | |
| PROPANE | | | | | |
| 5. Dome Petroleum Limited | EPR-917-79 ^(c) | Any point on the international boundary between Canada and the United States | 79-09-06 | 96-01-31 | Not Specified |
| 6. Amoco Canada Petroleum Company Ltd. | EPR-918-79 ^(c) | Same as EPR-917-79 | 79-09-06 | 96-01-31 | Not Specified |
| 7. PanCanadian Gas Products Limited | EPR-919-79 ^(c) | Same as EPR-917-79 | 79-09-06 | 91-01-31 | Not Specified |
| 8. Imperial Oil Limited | EPR-922-80 ^(b) | Gretna, Man. | 80-09-01 | 90-08-31 | Not Specified |
| 9. Amoco Canada Petroleum Company Ltd. | EPR-929-83 ^(d) | Sarnia, Ont. | 83-11-01 | 84-10-31 | 18 476 |

G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1983

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM VOLUMES (m ³) |
|--|----------------------------------|--|--|--|---|
| | | | FROM | TO | |
| BUTANES | | | | | |
| 1. Dome Petroleum Limited | EBU-1-74 (AO-3) ^(a) | Any place on the international boundary between Canada and the United States | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 792 461 773 405 689 235 587 597 528 837 433 551 |
| 2. Dome Petroleum Limited | EBU-132-74 (AO-1) ^(b) | Gretna, Man. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 95-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 95-12-31 | 603 129 580 324 556 375 532 601 502 284 452 037 437 093 402 186 352 812 341 711 315 460 299 627 290 273 272 057 265 117 245 012 239 724 |
| 3. Amoco Canada Petroleum Company Ltd. | EBU-133-74 (AO-1) ^(b) | Gretna, Man. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 95-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 95-12-31 | 618 088 575 893 540 176 488 674 423 848 374 315 359 244 308 345 260 131 239 549 205 008 179 455 163 527 135 973 122 506 95 286 91 062 |

G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1983

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM VOLUMES (m ³) |
|--|----------------------------------|--|--|--|---|
| | | | FROM | TO | |
| BUTANES | | | | | |
| 4. PanCanadian Gas Products Limited | EBU-134-74 (AO-1) ^(b) | Gretna, Man. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 | 213 822 213 822 213 822 213 822 213 822 240 550 240 550 240 550 240 550 240 550 240 550 240 550 240 550 |
| 5. Imperial Oil Limited | EBU-911-80 ^(b) | Gretna, Man. | 80-09-01 | 90-08-31 | Not Specified |
| 6. Texaco Canada Inc. | EBU-916-82 ^(b) | Gretna, Man. | 82-07-01 | 92-06-30 | Not Specified |
| 7. Amoco Canada Petroleum Company Ltd. | EBU-928-83 ^(f) | Sarnia, Ont. | 84-11-01 | 84-10-31 | Not Specified |
| ETHANE | | | | | |
| 1. Dome Petroleum Limited | GL-45 (AO-5) ^(g) | Any point on the international boundary between Canada and the United States | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 530 325 537 245 547 703 565 080 571 399 549 883 |
| 2. Dome Petroleum Limited | GL-47 (AO-8) | Elmore, Sask. and Windsor, Ont. | 78-08-15 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 | 78-12-31 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 | 835 298 2 211 664 2 195 866 2 053 688 1 563 962 1 405 986 1 184 820 458 130 |
| 3. Dome Petroleum Limited | GO-1-76 (AO-1) ^(h) | Elmore, Sask. | 78-01-01 | 85-12-31 | 3 949 m ³ /a |
| 4. Dome Petroleum Limited | GL-51 (AO-4) | Elmore, Sask. and Windsor, Ont. | 79-06-21 | 93-12-31 | 19 069 000 |

G-IV (cont'd)

CURRENT LICENCES AND ORDERS TO EXPORT NATURAL GAS, PROPANE, BUTANES, ETHANE, AND ETHYLENE AS AT 31 DECEMBER 1982

| EXPORTER | LICENCE OR ORDER NUMBER | POINT OF EXPORT | TERM OF LICENCE OR ORDER | | MAXIMUM VOLUMES (kg) |
|-----------------------------------|--------------------------------|---|--------------------------|----------|----------------------|
| | | | FROM | TO | |
| ETHYLENE | | | | | |
| 1. Dow Chemical of Canada Limited | EYL-1-76 (AO-2) | Elmore, Sask. Sarnia and Windsor Ont. | 80-01-01 | 89-12-31 | 158 757 340 kg/a |
| 2. Dow Chemical of Canada Limited | EYL-2-76 (AO-1) ⁽ⁱ⁾ | Elmore, Sask. | 78-01-01 | 97-12-31 | 68 038 860 kg/a |

- (a) This is an import-export licence whereby propane imported at Sarnia or Windsor, Ont. may be exported at any place on the international boundary between Canada and the United States.
- (b) This order authorizes an export at Gretna, Manitoba for subsequent import at Sarnia, Ontario.
- (c) This order authorizes an export of propane at any point on the international boundary between Canada and the United States and subsequent import of the same propane within 30 days after the day of export.
- (d) This order authorizes an export at Sarnia, Ontario of propane that was previously imported by Amoco for reprocessing at Amoco's Sarnia fractionation plant.
- (e) This order authorizes an import at Sarnia or Windsor, Ontario for subsequent export at any place on the international boundary between Canada and the United States.
- (f) This order authorizes an export at Sarnia, Ontario of butanes that were previously imported by Amoco for reprocessing at Amoco's Sarnia fractionation plant.
- (g) This licence authorizes an export at any point on the international boundary between Canada and the United States. The quantity of ethane exported under the authority of this licence shall be equal to the quantities of ethane which the licensee imports near Sarnia and Windsor, Ontario.
- (h) This order authorizes an export of ethane at Elmore, Saskatchewan for subsequent import at Windsor, Ontario.
- (i) This order authorizes an export of ethylene at Elmore, Saskatchewan for subsequent import at Windsor, Ontario.

G-V

EXPORTS OF NATURAL GAS

| Exporter and Licence/Order ^(a) | 10 ⁶ m ³ | | | | | | |
|---|---------------------------------------|---------|---------|---------|---------------------------------------|--------------------------|---|
| | Cumulative ^(b) to 80-12-31 | 1981 | 1982 | 1983 | Cumulative ^(b) to 83-12-31 | Total Authorized Exports | Remaining ^(c) Under Licences |
| 1. TransCanada PipeLines Limited GL-1 | 39 793.8 | 148.5 | — | — | 39 942.3 | 39 942.3 | — |
| 2. Alberta & Southern Gas Co. Ltd. GL-3 | 82 456.8 | 3 514.5 | 3 729.2 | 4 645.6 | 94 346.1 | 109 467.8 | 15 121.7 |
| 3. Westcoast Transmission Company Limited GL-4 | 24 413.7 | 928.8 | 738.6 | 656.4 | 26 737.5 | 35 250.9 | 8 513.4 |
| 4. Canadian-Montana Pipe Line Company GL-5 | 5 922.9 | 255.0 | 206.5 | 1.9 | 6 386.3 | 7 832.3 | 1 446.0 |
| 5. Niagara Gas Transmission Limited GL-6 | 2 472.6 | 108.3 | 68.3 | 27.7 | 2 676.9 | 3 433.0 | 756.1 |
| 6. Alberta & Southern Gas Co. Ltd. GL-16 | 27 876.4 | 1 367.6 | 317.8 | 210.0 | 29 771.8 | 45 721.1 | 15 949.3 |
| 7. Canadian-Montana Pipe Line Company GL-17 | 2 830.8 | 124.3 | 79.5 | 0.8 | 3 034.4 | 4 652.8 | 1 618.4 |
| 8. TransCanada PipeLines Limited GL-18 | 17 874.4 | 1 092.5 | 236.2 | 48.0 | 19 251.1 | 33 993.4 | 14 742.3 |
| 9. TransCanada PipeLines Limited GL-19 | 1 353.3 | 130.0 | 128.0 | 130.6 | 1 741.9 | 3 059.4 | 1 317.5 |
| 10. TransCanada PipeLines Limited GL-20 | 10 726.5 | 860.1 | 790.7 | 403.1 | 12 780.4 | 21 670.8 | 8 890.4 |
| 11. TransCanada PipeLines Limited GL-21 | 71 741.1 | 5 882.8 | 5 191.2 | 4 507.0 | 87 322.1 | 169 967.0 | 82 644.9 |
| 12. Alberta & Southern Gas Co. Ltd. GL-24 | 24 595.6 | 1 352.4 | 1 281.3 | 132.5 | 27 361.8 | 52 491.0 | 25 129.2 |
| 13. Canadian-Montana Pipe Line Company GL-25 | 3 508.4 | 5.2 | 2.7 | — | 3 516.3 | 4 905.4 | 1 389.1 |
| 14. ICG Transmission Holdings Ltd. GL-28 | 81.3 | 7.9 | 9.0 | 8.2 | 106.4 | 229.0 | 122.6 |
| 15. ICG Transmission Holdings Ltd. GL-29 | 1 972.1 | 149.7 | 135.1 | 151.4 | 2 408.3 | 5 462.2 | 3 053.9 |

G-V (cont'd)

EXPORTS OF NATURAL GAS

| Exporter and Licence/Order ^(a) | 10 ⁶ m ³ | | | | | | |
|--|---------------------------------------|---------|---------|---------|---------------------------------------|--------------------------|---|
| | Cumulative ^(b) to 80-12-31 | 1981 | 1982 | 1983 | Cumulative ^(b) to 83-12-31 | Total Authorized Exports | Remaining ^(c) Under Licences |
| 16. ICG Transmission Holdings Ltd. GL-30 | 2 935.2 | 252.2 | 233.8 | 246.6 | 3 667.8 | 8 498.1 | 4 830.3 |
| 17. Alberta & Southern Gas Co. Ltd. GL-35 | 18 894.1 | 1 166.7 | 1 864.9 | 2 062.8 | 23 988.5 | 32 506.2 | 8 517.7 |
| 18. Canadian-Montana Pipe Line Company GL-36 | 929.9 | 122.8 | 100.2 | 30.3 | 1 183.2 | 1 628.5 | 445.3 |
| 19. TransCanada PipeLines Limited GL-37 | 20 347.6 | 1 760.7 | 1 647.0 | 839.7 | 24 595.0 | 40 601.0 | 16 006.9 |
| 20. TransCanada PipeLines Limited GL-38 | 5 104.8 | 373.0 | 200.0 | 178.1 | 5 855.9 | 10 368.0 | 4 512.1 |
| 21. TransCanada PipeLines Limited GL-39 | 741.9 | 49.5 | 12.0 | 1.7 | 805.1 | 1 493.0 | 687.9 |
| 22. Westcoast Transmission Company Limited GL-41 | 58 666.6 | 3 805.1 | 2 608.3 | 2 424.9 | 67 505.0 | 143 495.2 | 75 990.2 |
| 23. TransCanada PipeLines Limited GL-42 | 20 536.1 | 2 189.4 | 1 932.0 | 1 677.4 | 26 334.9 | 60 316.5 | 33 981.6 |
| 24. TransCanada PipeLines Limited GL-43 | 1 335.9 | — | — | — | 1 335.9 | 9 631.5 | 8 295.6 |
| 25. Consolidated Natural Gas Limited GL-44 | 3 969.6 | 370.2 | 277.9 | 254.4 | 4 872.1 | 18 951.3 | 14 079.2 |
| 26. Canadian-Montana Pipe Line Company GL-52 | 189.3 | 83.8 | — | 74.3 | 347.4 | 2 266.4 | 1 919.0 |
| 27. Columbia Gas Development of Canada Ltd. GL-54 | — | — | — | — | — | 3 556.1 | 3 556.1 |
| 28. Niagara Gas Transmission Limited GL-55 | 31.9 | 71.4 | 89.1 | 152.7 | 345.1 | 1 500.2 | 1 155.1 |
| 29. ProGas Limited GL-56 | — | 668.0 | 1 465.6 | 1 493.6 | 3 627.2 | 17 050.0 | 13 422.8 |
| 30. Sulpetro Limited GL-57 | 238.1 | 581.2 | 523.3 | 452.7 | 1 795.3 | 1 869.6 | 74.3 |
| 31. Pan-Alberta Gas Ltd. GL-58 | — | — | 1 127.8 | 3 137.4 | 4 565.2 | 50 146.0 | 45 580.8 |

G-V (cont'd)

EXPORTS OF NATURAL GAS

| Exporter and Licence/Order ^(a) | 10 ⁶ m ³ | | | | | | |
|--|---------------------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------------------------|--------------------------|---|
| | Cumulative ^(b) to 80-12-31 | 1981 | 1982 | 1983 | Cumulative ^(b) to 83-12-31 | Total Authorized Exports | Remaining ^(c) Under Licences |
| 32. Pan-Alberta Gas Ltd. GL-59 | — | 280.0 | 1 647.1 | 1 097.4 | 3 024.5 | 16 174.0 | 13 149.5 |
| 33. TransCanada PipeLines Limited GL-60 | 800.0 | 1 574.0 | 1 332.6 | 999.6 | 4 706.2 | 10 896.4 | 6 190.2 |
| 34. Consolidated Natural Gas Limited GL-61 | 103.8 | 707.1 | 1 265.4 | 607.4 | 2 683.7 | 13 389.6 | 10 705.9 |
| 35. Union Gas Limited GL-64 | 6.7 | 296.1 | 284.4 | 196.9 | 784.1 | 1 420.0 | 635.9 |
| 36. Canadian-Montana Pipe Line Company GO-3-79 | — | — | 5.5 | 3.4 | 8.9 | 105.0 | 96.1 |
| 37. Gaz Métropolitain, inc. GO-4-80 | — | — | — | — | — | 13.3 | 11.6 |
| 38. Gas Métropolitain, inc. GO-2-81 | — | — | — | — | — | 0.1 | — |
| Gross Exports ^(d) | 452 451.2 | 30 278.8 | 29 831.1 | 26 854.5 | 539 414.6 | | |
| Deduct Re-Exports of Imports: | | | | | | | |
| Item 25, GL-44 | 3 969.6 | 370.2 | 277.9 | 254.4 | 4 872.1 | | |
| Deduct Exports for Re-Imports: | | | | | | | |
| Item 11, GL-21 Item 16, GL-30 Item 23, GL-42 | 71 741.1 2 935.2 20 536.1 | 5 882.8 252.2 2 189.4 | 5 191.2 233.8 1 932.0 | 4 507.0 246.6 1 677.4 | 87 322.1 3 667.8 26 334.9 | | |
| Net Exports | 353 269.2 | 21 583.9 | 22 196.1 | 20 168.8 | 417 217.7 | | |

(a) For information on the term, point of export, and maximum authorized volumes under each licence and order, please see Appendix G-IV.

(b) Cumulative totals only includes those export licences and orders listed on the table.

(c) It may not be possible to export volumes remaining under these licences due to restrictions on peak day and annual volumes.

(d) The Gross Exports shown are the total for subsisting licences and orders. For volumes exported under expired licences and orders, please see previous Annual Reports of the National Energy Board.

Figures may not total due to rounding.

N/S Not specified

N/A Not applicable.

— Amount too small to be expressed.

G-VI

NEW LICENCES AND ORDERS TO IMPORT NATURAL GAS AND ETHANE IN 1983.

| TYPE OF LICENCE OR ORDER | IMPORTER | LICENCE OR ORDER NUMBER | POINT OF IMPORT | TERM OF ORDER | | MAXIMUM IMPORT VOLUME (10^6m^3) |
|--------------------------------|---|-----------------------------|-----------------|---------------|----------|--|
| | | | | FROM | TO | |
| New Natural Gas Import Licence | 1. Transcontinental Gas Pipe Line Corporation | GL-91 (AO-1) ^(m) | Sarnia, Ont. | 84-11-01 | 96-10-31 | 16 329.6 |
| New Ethane Import Order | 1. Dome Petroleum Limited | GO-1-83 | Sarnia, Ont. | 83-12-22 | 84-03-31 | .160 |

G-VII

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, BUTANES, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1983

| IMPORTER | LICENCE OR ORDER NUMBER | POINT OF IMPORT | TERM OF LICENCE OR ORDER | | MAXIMUM IMPORT VOLUME | | |
|---|-----------------------------|----------------------------------|--|--|--|--------------------------------------|-----------------------|
| | | | FROM | TO | DAILY 10^3m^3 | ANNUAL 10^6m^3 | TERM 10^6m^3 |
| Natural Gas | | | | | | | |
| 1. TransCanada PipeLines Limited | GL-21(AO-7) ^(a) | Sault Ste-Marie and Sarnia, Ont. | 68-11-05 | 91-10-31 | N/S | 7 019.1 | 169 967.0 |
| 2. ICG Transmission Holdings Ltd. | GL-30(AO-3) ^(b) | Rainy River, Ont. | 70-11-01 | 95-10-31 | 1 321.8 | 344.0 | 8 498.1 |
| 3. TransCanada PipeLines Limited | GL-42(AO-3) ^(a) | Sault-Ste-Marie and Sarnia, Ont. | 71-04-15 71-11-01 | 71-10-31 94-10-21 | N/S N/S | 232.8 2 612.3 | 60 316.5 |
| 4. Consolidated Natural Gas Limited | GLI-5(AO-2) | Willow Creek, Sask. | 72-03-15 | 92-10-31 | 4 249.2 | 1 274.8 | 18 951.3 |
| 5. Tenneco LNG Inc. | GLI-7 | Saint John, N.B. | (c) | (d) | N/S | 418.68PJ | 8 373.6PJ |
| 6. Border Utilities Limited | GO-2-66(AO-2) | Coutts, Alta. | 66-06-02 | 85-09-14 | 30.0 | N/S | N/S |
| 7. Canadian Western Natural Gas Company Limited | GO-6-66(AO-3) | Coutts, Alta. | 66-09-22 | 85-09-14 | 30.0 | N/S | N/S |
| 8. Transcontinental Gas Pipe Line Corporation | GL-91 (AO-1) ^(m) | Sarnia, Ont. | 84-11-01 93-11-01 94-11-01 95-11-01 | 93-10-31 94-10-31 95-10-31 96-10-31 | 4 249.2 3 156.9 2 124.6 1 062.3 | 1 555.2 1 166.4 777.6 388.8 | 16 329.6 |

G-VII (cont'd)

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, BUTANES, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1983

| IMPORTER | LICENCE OR ORDER NUMBER | POINT OF IMPORT | TERM OF LICENCE OR ORDER | | MAXIMUM IMPORT VOLUME (m ³) |
|---|---------------------------------|-------------------------------|--|--|---|
| | | | FROM | TO | |
| Propane | | | | | |
| 1. Dome Petroleum Limited | GL-46(AO-5) ^(e) | Sarnia, Ont. Windsor, Ont. | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 619 047 601 587 547 619 547 254 535 000 535 000 |
| 2. Amoco Canada Petroleum Company Limited | EPR-939-83 ^(f) | Sarnia, Ont. | 83-08-01 | 84-10-31 | 18 476 |
| Butanes | | | | | |
| 1. Dome Petroleum Limited | EBU-1-74(AO-3) ^(g) | Sarnia, Ont. Windsor, Ont. | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 792 461 773 405 689 235 587 597 528 837 433 551 |
| 2. Dome Petroleum Limited | EBU-132-74(AO-1) ^(h) | Sarnia, Ont. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 95-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 95-12-31 | 603 129 580 324 556 375 332 601 502 284 452 037 437 093 402 186 352 812 341 711 315 460 299 627 290 273 272 057 265 117 245 012 239 724 |

G-VII (cont'd)

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, BUTANES, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1983

| IMPORTER | LICENCE OR ORDER NUMBER | POINT OF IMPORT | TERM OF LICENCE OR ORDER | | MAXIMUM IMPORT VOLUME (m ³) |
|--|---------------------------------|--------------------|--|--|---|
| | | | FROM | TO | |
| Butanes | | | | | |
| 3. Amoco Canada Petroleum Company Ltd. | EBU-133-74(AO-1) ^(h) | Sarnia, Ont. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 95-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 95-12-31 | 618 088 575 893 540 176 488 674 423 848 374 315 359 244 308 345 260 131 239 549 205 008 179 455 163 527 135 973 122 506 95 286 91 062 |
| 4. PanCanadian Gas Company Limited | EBU-134-74(AO-1) ^(h) | Sarnia, Ont. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 | 213 822 213 822 213 822 213 822 213 822 240 550 240 550 240 550 240 550 240 550 240 550 240 550 |
| 5. Amoco Canada Petroleum Company Ltd. | EBU-928-83 ⁽ⁱ⁾ | Sarnia, Ont. | 83-11-01 | 84-10-31 | N/S |

G-VII (cont'd)

CURRENT LICENCES AND ORDERS TO IMPORT NATURAL GAS, PROPANE, BUTANES, ETHANE AND ETHYLENE AS AT 31 DECEMBER 1983

| IMPORTER | LICENCE OR ORDER NUMBER | POINT OF IMPORT | TERM OF LICENCE OR ORDER | | MAXIMUM IMPORT VOLUME (m ³) |
|-----------------------------------|-------------------------------|-----------------------------------|--|--|--|
| | | | FROM | TO | |
| Ethane | | | | | |
| 1. Dome Petroleum Limited | GL-45(AO-5) ^(l) | Sarnia, Ont. and Windsor, Ont. | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 530 325 537 245 547 703 565 080 571 399 549 883 |
| 2. Dome Petroleum Limited | GO-1-76(AO-1) ^(k) | Windsor, Ont. | 78-01-01 | 85-12-31 | 3 949 m ³ /a |
| 3. Dome Petroleum Limited | GO-1-83 | Sarnia, Ont. | 83-12-22 | 84-03-31 | 160 000 |
| Ethylene | | | | | |
| 1. Dow Chemical of Canada Limited | EYL-2-76(AO-1) ^(l) | Windsor, Ont. | 78-01-01 | 97-12-31 | 68 038 860 kg/a |

- (a) This licence authorizes an export near Emerson, Manitoba for re-import near Sault Ste. Marie and Sarnia, Ontario, to serve the Eastern Canadian market.
 - (b) This licence authorizes an export near Sprague, Manitoba for re-import near Rainy River, Ontario.
 - (c) From the date of Initial Delivery.
 - (d) Twenty years and six months after the date of First Regular Delivery and not exceeding 25 years.
 - (e) This is an import-export licence whereby propane imported at Sarnia or Windsor may be exported at any place on the international boundary between Canada and the United States in the Province of Ontario.
 - (f) This is an import-export licence whereby propane imported at the international boundary between Canada and the United States near Sarnia, Ontario, is subsequently exported at that same location.
 - (g) This order authorizes an import at Sarnia or Windsor, Ontario for subsequent export at any point on the international boundary between Canada and the United States.
 - (h) This order authorizes an export at Gretna, Manitoba for subsequent import at Sarnia, Ontario.
 - (i) This is an import-export licence whereby butane imported at the international boundary between Canada and the United States near Sarnia, Ontario, is subsequently exported at that same location.
 - (j) This licence authorizes an export at any point on the international boundary between Canada and the United States. The quantity of ethane exported under the authority of this licence shall be equal to the quantities of ethane which the licensee imports near Sarnia and Windsor, Ontario.
 - (k) This order authorizes an export of ethane at Elmore, Saskatchewan for subsequent import at Windsor, Ontario.
 - (l) This order authorizes an export of ethylene at Elmore, Saskatchewan for subsequent import at Windsor, Ontario.
 - (m) This licence authorizes the import of gas for storage in Canada and subsequent re-export to the United States.
- N/S Not specified
 N/A Not applicable

G-VIII

IMPORTS OF NATURAL GAS

| Importer and Licence/Order ^(a) | 10 ⁶ m ³ | | | | | | |
|--|---------------------------------------|---------|---------|---------|---------------------------------------|--------------------------|---|
| | Cumulative ^(b) to 80-12-31 | 1981 | 1982 | 1983 | Cumulative ^(b) to 83-12-31 | Total Authorized Imports | Remaining ^(c) Under Licences |
| 1. Border Utilities Ltd. GO-2-66 | 13.8 | 0.8 | 1.0 | 0.9 | 16.5 | N/S | — |
| 2. Canadian Western Natural Gas Company Ltd. GO-6-66 | 22.3 | 2.2 | 3.6 | 3.0 | 31.1 | N/S | — |
| 3. Consolidated Natural Gas Limited GLI-5 | 4 030.1 | 376.2 | 283.1 | 258.1 | 4 947.5 | 18 951.3 | 14 003.8 |
| 4. TransCanada PipeLines Limited GL-21 | 71 709.6 | 5 851.8 | 5 174.6 | 4 480.6 | 87 216.6 | 169 967.0 | 82 750.4 |
| 5. ICG Transmission Holdings Ltd. GL-30 | 2 935.2 | 252.2 | 233.8 | 246.6 | 3 667.8 | 8 498.1 | 4 830.3 |
| 6. TransCanada PipeLines Limited GL-42 | 20 524.5 | 2 177.9 | 1 925.9 | 1 840.3 | 26 468.6 | 60 316.5 | 33 847.9 |
| 7. Gaz Métropolitain, inc. GO-3-80 | 0.7 | 0.9 | — | — | 1.6 | 13.3(f) | |
| Gross Imports ^(d) | 99 236.2 | 8 662.0 | 7 622.0 | 6 829.5 | 122 349.7 | | |
| Deduct Imports for Re-Exports: | | | | | | | |
| Item 3, GLI-5 | 4 030.1 | 376.2 | 283.1 | 258.1 | 4 947.5 | | |
| Item 7, GO-3-80 | 0.7 | 0.9 | — | — | 1.6 | | |
| Deduct Re-Imports ^(d) of Exports: | | | | | | | |
| Item 4, GL-21 | 71 709.6 | 5 851.8 | 5 174.6 | 4 480.6 | 87 216.6 | | |
| Item 5, GL-30 | 2 935.2 | 252.2 | 233.8 | 246.6 | 3 667.8 | | |
| Item 6, GL-42 | 20 524.5 | 2 177.9 | 1 925.9 | 1 840.3 | 26 468.6 | | |
| Net Imports | 36.1 | 3.0 | 4.6 | 3.9 | 47.6 | | |

(a) For information on the term, point of import and maximum authorized volumes under each licence and order, please see Appendix G-VII.

(b) Cumulative totals only includes those import licences and orders listed on the table.

(c) It may not be possible to import total volumes remaining under licences due to restrictions on peak day and annual volumes.

(d) The Gross Imports shown are the total for subsisting licences and orders. For volumes imported under expired licences and orders, please see previous Annual Reports of the National Energy Board.

Figures may not total due to rounding.

N/S Not specified

N/A Not applicable

G-IX

EXPORTS OF PROPANE, BUTANES, ETHANE AND ETHYLENE UNDER LONG TERM LICENCES AND ORDERS*—1983 (VOLUME IN CUBIC METRES)

| EXPORTER | LICENCE OR ORDER NUMBER | 1981 ACTUAL | 1982 ACTUAL | 1983 (PRELIMINARY) |
|--|-------------------------|-------------|-------------|--------------------|
| A. PROPANE | | | | |
| 1. Dome Petroleum Limited | GL-31 | 656 190 | 620 476 | 133 254 |
| 2. Amoco Canada Petroleum Company Ltd. | GL-32 | 92 698 | 92 697 | 92 695 |
| 3. PanCanadian Gas Products Limited | GL-34 | — | — | — |
| 4. Dome Petroleum Limited | GL-46 | 448 435 | 333 100 | 494 882 |
| 5. Dome Petroleum Limited | EPR-908-77 | — | N/A | N/A |
| 6. Dome Petroleum Limited | EPR-917-79 | 729 595 | 747 873 | 459 406 |
| 7. Amoco Canada Petroleum Company Ltd. | EPR-918-79 | 562 853 | 558 248 | 574 273 |

G-IX (cont'd)

EXPORTS OF PROPANE, BUTANES, ETHANE AND ETHYLENE UNDER LONG TERM LICENCES AND ORDERS*—1983 (VOLUME IN CUBIC METRES)

| EXPORTER | LICENCE OR ORDER NUMBER | 1981 ACTUAL | 1982 ACTUAL | 1983 (PRELIMINARY) |
|---|-------------------------|-------------|-------------|--------------------|
| 8. PanCanadian Gas Products Limited | EPR-919-79 | 273 793 | 309 336 | 182 278 |
| 9. Imperial Oil Limited | EPR-922-80 | 397 007 | 397 634 | 409 873 |
| 10. Amoco Canada Petroleum Company Ltd. | EPR-924-81 | — | N/A | N/A |
| 11. Amoco Canada Petroleum Company Ltd. | EPR-925-81 | — | — | N/A |
| 12. NGL Supply Limited | EPR-926-81 | 212 | 429 | N/A |
| 13. Dome Petroleum Limited | EPR-927-82 | N/A | — | — |
| 14. Amoco Canada Petroleum Company Ltd. | EPR-928-83 | N/A | N/A | 4 706 |
| 15. Amoco Canada Petroleum Company Ltd. | EPR-929-83 | N/A | N/A | — |
| B. BUTANES | | | | |
| 1. Dome Petroleum Limited | EBU-1-74 | 398 331 | 332 906 | 279 283 |
| 2. Dome Petroleum Limited | EBU-132-74 | 363 484 | 433 150 | 382 248 |
| 3. Amoco Canada Petroleum Company Ltd. | EBU-133-74 | 314 005 | 324 542 | 365 540 |
| 4. PanCanadian Gas Products Limited | EBU-134-74 | 123 351 | 138 335 | 76 353 |
| 5. Imperial Oil Limited | EBU-911-80 | 234 763 | 227 822 | 223 091 |
| 6. Dome Petroleum Limited | EBU-913-81 | — | N/A | N/A |
| 7. Amoco Canada Petroleum Company Ltd. | EBU-914-81 | — | N/A | N/A |
| 8. Amoco Canada Petroleum Company Ltd. | EBU-915-81 | — | — | N/A |
| 9. Texaco Canada Inc. | EBU-916-82 | N/A | 24 184 | 49 645 |
| 10. Dome Petroleum Limited | EBU-927-82 | N/A | 2 090 | N/A |

G-IX (cont'd)

EXPORTS OF PROPANE, BUTANES, ETHANE AND ETHYLENE UNDER LONG TERM LICENCES AND ORDERS*—1983 (VOLUME IN CUBIC METRES)

| EXPORTER | LICENCE OR ORDER NUMBER | 1981 ACTUAL | 1982 ACTUAL | 1983 (PRELIMINARY) |
|-----------------------------------|-------------------------|-------------|-------------|--------------------|
| C. ETHANE | | | | |
| 1. Dome Petroleum Limited | GL-45 | 489 840 | 374 397 | 386 978 |
| 2. Dome Petroleum Limited | GL-47 | 1 831 819 | 1 873 189 | 1 589 072 |
| 3. Dome Petroleum Limited | GO-1-76 | — | — | — |
| 4. Dome Petroleum Limited | GL-51 | 934 951 | 1 092 479 | 1 241 000 |
| D. ETHYLENE | | | | |
| 1. Dow Chemical of Canada Limited | EYL-1-76 | 74 945 478 | — | 46 041 696 |
| 2. Dow Chemical of Canada Limited | EYL-2-76 | 68 000 000 | 65 951 333 | 68 038 860 |
| 3. Dow Chemical of Canada Limited | EYL-2-80 | 2 445 715 | N/A | N/A |
| 4. Imperial Oil Limited | EYL-2-79 | 1 245 700 | — | N/A |
| 5. Dow Chemical of Canada Inc. | EYL-1-81 | N/A | — | N/A |
| 6. Esso Chemical Canada | EYL-1-82 | N/A | — | — |
| 7. Petrosar Limited | EYL-2-82 | N/A | — | — |

* See Appendix G-IV for particulars.

N/A Not Applicable

G-X

IMPORTS OF PROPANE, BUTANES, ETHANE AND ETHYLENE UNDER LONG TERM LICENCES AND ORDERS*—1983 (VOLUME IN CUBIC METRES)

| IMPORTER | LICENCE OR ORDER NUMBER | 1981 ACTUAL | 1982 ACTUAL | 1983 (PRELIMINARY) |
|---|-------------------------|-------------|-------------|--------------------|
| A. <u>PROPANE</u> | | | | |
| 1. Dome Petroleum Limited | GL-46 | 438 516 | 431 996 | 381 478 |
| 2. Dome Petroleum Limited | EPR-908-77 | — | N/A | N/A |
| 3. Dome Petroleum Limited | EPR-917-79 | 718 179 | 751 585 | 492 750 |
| 4. Amoco Canada Petroleum Company Ltd. | EPR-918-79 | 573 386 | 558 901 | 569 552 |
| 5. PanCanadian Gas Products Limited | EPR-919-79 | 273 793 | 309 336 | 182 278 |
| 6. Imperial Oil Limited | EPR-922-80 | 380 116 | 376 999 | 390 971 |
| 7. Amoco Canada Petroleum Company Ltd. | EPR-924-81 | — | N/A | N/A |
| 8. Amoco Canada Petroleum Company Ltd. | EPR-925-81 | — | — | N/A |
| 9. NGL Supply Limited | EPR-926-81 | 641 | — | N/A |
| 10. Dome Petroleum Limited | EPR-927-82 | N/A | — | — |
| 11. Amoco Canada Petroleum Company Ltd. | EPR-928-83 | N/A | N/A | 4 706 |
| 12. Amoco Canada Petroleum Company Ltd. | EPR-929-83 | N/A | N/A | — |

G-X (cont'd)

IMPORTS OF PROPANE, BUTANES, ETHANE AND ETHYLENE UNDER LONG TERM LICENCES AND ORDERS*—1983 (VOLUME IN CUBIC METRES)

| IMPORTER | LICENCE OR ORDER NUMBER | 1981 ACTUAL | 1982 ACTUAL | 1983 (PRELIMINARY) |
|--|-------------------------|-------------|-------------|--------------------|
| B. BUTANES | | | | |
| 1. Dome Petroleum Limited | EBU-1-74 | 314 441 | 311 167 | 277 967 |
| 2. Dome Petroleum Limited | EBU-132-74 | 345 893 | 433 594 | 382 972 |
| 3. Amoco Canada Petroleum Company Ltd. | EBU-133-74 | 322 455 | 330 607 | 362 579 |
| 4. PanCanadian Gas Products Limited | EBU-134-74 | 123 351 | 138 335 | 76 353 |
| 5. Imperial Oil Limited | EBU-911-80 | 225 405 | 218 997 | 212 600 |
| 6. Dome Petroleum Limited | EBU-913-81 | — | N/A | N/A |
| 7. Amoco Canada Petroleum Company Ltd. | EBU-914-81 | — | N/A | N/A |
| 8. Amoco Canada Petroleum Company Ltd. | EBU-915-81 | — | — | N/A |
| 9. Texaco Canada Inc. | EBU-916-82 | N/A | 23 722 | 52 103 |
| 10. Dome Petroleum Limited | EBU-927-82 | N/A | 2 090 | N/A |
| C. ETHANE | | | | |
| 1. Dome Petroleum Limited | GL-45 | 493 859 | 503 777 | 420 164 |
| 2. Dome Petroleum Limited | GO-1-76 | — | — | — |
| 3. Dome Petroleum Limited | GO-1-83 | N/A | N/A | — |
| D. ETHYLENE | | | | |
| 1. Dow Chemical of Canada Limited | EYL-1-76 | 74 945 478 | — | 46 041 696 |
| 2. Dow Chemical of Canada Limited | EYL-2-76 | 68 000 000 | 65 951 333 | 68 038 860 |

* See Appendix G-VII for particulars.

N/A Not Applicable.

G-XI

NET EXPORTS OF PROPANE AND BUTANES

A) PROPANE (Volume in cubic metres)

| EXPORTER | 1981 ACTUAL | 1982 ACTUAL | 1983 (PRELIMINARY) |
|---|----------------|----------------|-----------------------|
| Atlantic Speedy Propane Ltd. ^(a) | 77.2 | 79 | 74 |
| Amoco Canada Petroleum Company Ltd. | 399 744 | 496 963 | 275 693 |
| Big Horn Supply Ltd. | 29 136 | 15,608 | — |
| B.P. Resources Canada Ltd. | 1 532.5 | 284 | — |
| Burnwell Gas of Canada Ltd. | 35 442 | 24 941 | 16 740 |
| Canadian Enterprise Gas Products Ltd. | 51 852 | 62 912 | 41 960 |
| Canadian Superior Oil Ltd. | 53 062 | 67 491 | 39 028 |
| Can-Am Liquide Corp. Ltd. ^(a) | 10 282 | 13 855 | 12 339 |
| Chevron Canada Resources Ltd. | 219 330 | 232 434 | 157 943 |
| M-P Oils Ltd. ^(b) | 17 350 | 15 218 | 10 906 |
| Dillingham Construction Ltd. ^(c) | 18 974 | 10 650 | — |
| Dome Petroleum Limited | 695 511 | 822 584 | 645 654 |
| Elgin Petroleum Limited | 7 289 | 14 346 | 2 127 |
| Esso Resources Canada Limited | 392 653 | 336 573 | 207 295 |
| ICG Gaz Liquide Ltée. | 36 344 | 43 958 | 10 230 |
| Gas Supply (Minneapolis) Ltd. | 454 | — | — |
| Gulf Canada Products Company | 448 050 | 502 170 | 369 992 |
| Home Oil Company Limited | 58 841 | 72 122 | 35 922 |
| Hudson's Bay Oil and Gas Company Limited | 55 861 | 11 214 | — |
| Husky Oil Operations Limited | — | 2 621 | 3 326 |
| ICG Liquid Gas Ltd. ^(d) | 356 | 442 | 17 658 |
| Irving Oil Company | — | — | — |
| Koch Hydrocarbons Canada | 1 227 | 6 123 | 3 666 |
| Mobil Oil Canada Ltd. | 71 101 | 91 975 | 104 452 |
| N.G.L. Supply Ltd. | 14 719 | 17 293 | 753 |
| Northern Petro Products Ltd. | 1 802 | 1 194 | 821 |
| Raymond Gas Liquids Inc. | — | 2 893 | 5 076 |
| PanCanadian Gas Products Ltd. | 181 113 | 246 216 | 178 931 |
| Petro-Canada Exploration Inc. | 281 711 | 396 620 | 357 359 |
| Petrosol International Ltd. | — | 16 592 | 7 007 |
| Proflame Limited ^(e) | — | 271 | 322 |
| Real International Marketing Ltd. | 10 576 | 1 789 | — |
| Shell Canada Resources Limited | 142 139 | 149 198 | 141 240 |
| Stephens Energy Limited | 67 014 | 113 608 | 86 918 |
| Stillings Canada Petroleum Company | 92 475 | 56 300 | 44 099 |
| Suncor Inc. ^(f) | — | 672 | — |
| Texaco Canada Inc. | 150 554 | 127 425 | 118 481 |
| Union Oil Co. of Canada Ltd. | 32 405 | 27 025 | 18 478 |
| Union Texas of Canada Ltd. | 57 892 | 41 213 | 14 700 |
| TOTALS | 3 636 868.7 | 4 042 872 | 2 929 190 |

(a) This company started exporting in July 1980.

(b) This company was formerly Dynex Petroleum Ltd.

(c) Prior to July 1980, exports were listed under the name of Canmore Oil and Gas Limited.

(d) Prior to January 1980, exports were listed under the name of Canadian Propane Gas & Oil Ltd.

(e) This company started exporting in April 1982.

(f) This company started exporting in November 1980.

G-XI (cont'd)

NET EXPORTS OF PROPANE AND BUTANES

B) BUTANES (Volume in Cubic Metres)

| EXPORTER | 1981 ACTUAL | 1982 ACTUAL | 1983 (PRELIMINARY) |
|--|------------------|------------------|-----------------------|
| Amoco Canada Petroleum Co. Ltd. | 399 348 | 462 711 | 376 909 |
| Big Horn Supply Ltd. | 16 951 | 4 635 | — |
| Canadian Enterprise Gas Products Ltd. | 36 348 | 55 735 | 16 335 |
| Canadian Superior Oil Ltd. | 85 777 | 60 019 | 36 708 |
| Can-Am Liquids Corp. Ltd. ^(a) | 6 218 | 4 406 | 5 939 |
| Chevron Canada Resources Ltd. | 5 640 | 27 476 | 36 537 |
| M-P Oils Ltd. ^(b) | 18 380 | 17 933 | 3 050 |
| Dome Petroleum Limited | 457 444 | 629 273 | 595 077 |
| Elgin Petroleum Limited | 8 488 | 5 144 | 2 040 |
| Esso Resources Canada Limited | 130 732 | 220 917 | 333 591 |
| Gas Supply (Minn.) Ltd. | 117 | 22 110 | 3 484 |
| Gray Oil Corporation ^(c) | — | 2 421 | 243 |
| Home Oil Company Limited | 107 763 | 113 724 | 45 086 |
| Hudson's Bay Oil and Gas Company Limited | 237 782 | 56 932 | — |
| Husky Oil Operations Ltd. | 6 125 | 9 127 | 5 276 |
| Koch Hydrocarbons Canada | 183 599 | 182 331 | 63 720 |
| Mobil Oil Canada Ltd. | 33 321 | 64 688 | 39 810 |
| Murphy Oil Company Ltd. | 8 507 | — | — |
| N.G.L. Supply Ltd. | 50 167 | 42 422 | 2 813 |
| Northern Petro Products Ltd. | 15 449 | 722 | 2 858 |
| Raymond Gas Liquids Inc. | 493 | 733 | 1 827 |
| PanCanadian Gas Products Ltd. | 68 124 | 129 899 | 84 820 |
| Petro-Canada Exploration Inc. | 92 386 | 120 232 | 241 010 |
| Petrosol International Ltd. | 17 695 | 45 086 | 6 697 |
| Real International Marketing Ltd. ^(e) | 9 236 | 1 774 | — |
| Rivecal Energy Limited ^(d) | — | 122 | 612 |
| Shell Canada Resources Limited | 168 437 | 146 481 | 138 702 |
| Stephens Energy Limited | 107 523 | 118 639 | 52 674 |
| Stilings Canada Petroleum Company | 140 784 | 115 557 | 23 430 |
| Texaco Canada Inc. | 129 017 | 185 724 | 144 254 |
| Union Oil Co. of Canada Ltd. | 1 889 | 5 575 | — |
| TOTALS | 2 543 740 | 2 852 548 | 2 263 502 |

(a) This company started exporting in July 1980.

(b) This company was formerly Dynex Petroleum Ltd.

(c) This company started exporting in June, 1982.

(d) This company started exporting in November 1982.

(e) This company started exporting in June 1981.

O-I

CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY FOR OIL PIPELINES ISSUED DURING 1983

No Certificates issued during 1983.

O-II

ORDERS RELATING TO NEW OIL PIPELINE FACILITIES ISSUED DURING 1983 CLASS "B" CONSTRUCTION

| APPLICANT | ORDER NO. | ISSUED | FACILITIES | ESTIMATED COST |
|--|-----------|----------|--|----------------|
| Dome Kerrobert Pipeline Ltd. and PanCanadian Kerrobert Pipeline Ltd. | XO-3-83 | 83-09-21 | Intermediate pump station, pumping equipment | (\$) |
| Interprovincial Pipe Line Limited | XO-1-83 | 83-05-04 | Modifications to pipeline, additional pipeline, truck loading facility | 3,943,000 |
| Manito Pipelines Ltd. | XO-2-83 | 83-05-18 | Additional pipeline and facilities for Blackfoot-Hazeldine extension | 16,400,000* |
| | | | | 8,215,500 |

*This order is still under review.

O-II (cont'd)

ORDERS RELATING TO NEW OIL PIPELINE FACILITIES ISSUED DURING 1983 CLASS "C" CONSTRUCTION

| APPLICANT | ORDER NO. | ISSUED | FACILITIES | ESTIMATED COST |
|---------------------------------------|------------------------|----------------------|--|-----------------|
| | | | | (\\$) |
| Cochin Pipe Lines Ltd. | XOM-1-83 | 83-01-12 | RTV simulator, data base compiler | 27,000 |
| Dome NGL Pipeline Ltd. | XOM-9-83 | 83-06-03 | Telemetry system replacement | 151,500 |
| Interprovincial Pipe Line Limited | XOM-2-83 | 83-02-09 | Injection facilities-pump station | 5,500,000 |
| Interprovincial Pipe Line Limited | XOM-6-83 | 83-04-20 | Pump stations additions and modifications, tank mixers, buildings, etc. | 844,700 |
| Interprovincial Pipe Line Limited | XOM-13-83 | 83-08-31 | Refined product tankage, crossovers between 12 and 20-inch lines | 3,646,500 |
| Interprovincial Pipe Line Limited | XOM-14-83 | 83-10-26 | Pump station works, building work, computer systems, pipeline control, automotive units, work equipment, improvements to leased facilities, office furniture and equipment, etc. | 8,039,500 |
| Manito Pipelines Ltd. | XOM-11-83 | 83-07-20 | Pipeline replacement, block valve, vibration monitor and test equipment, meter housing, fire extinguishers, storage building, painting, etc. | 365,500 |
| Manito Pipelines Ltd. | XOM-15-83 | 83-10-05 | Pipe replacement | 15,400 |
| Petroleum Transmission Company | XOM-7-83 | 83-05-11 | Pipe modification, block valves, replacement of density guages | 471,800 |
| Petroleum Transmission Company | XOM-12-83 | 83-08-17 | Pipeline modification | 231,313 |
| Trans Mountain Pipe Line Company Ltd. | XOM-3-83 | 83-03-16 | Replacement of station headers with straight pipe | 83,600 |
| Trans Mountain Pipe Line Company Ltd. | XOM-4-83 | 83-03-16 | Replacement of station headers with straight pipe | 192,500 |
| Trans-Northern Pipelines Inc. | XOM-5-83 | 83-03-23 | Micro processor based RTV, clean-up, fencing, equipment, replacement, intercom, relocation of powerline | 88,000 |
| Trans-Northern Pipelines Inc. | XOM-16-83 | 83-10-12 | Remote terminal unit, block valve program, inspection facilities, high pressure protection, photocopier, flanges and kits, etc. | 269,500 |
| Wascana Pipe Line Ltd. | XOM-10-83 XOM-17-83 | 83-07-06 83-11-30 | Piping modifications, electrical controls Regina Station improvements | 21,230 7,700 |
| Westspur Pipe Line Company | XOM-8-83 | 83-05-25 | Pipe replacement | 278,500 |

O-III

EXPORTS OF CANADIAN CRUDE OIL AND EQUIVALENT 1983 AND 1982

| Company | Destination | 1983 | | 1982 | |
|--------------------------------|----------------------|-----------------------------------|------------------|-----------------------------------|------------------|
| | | Total Cubic Metres for Year | Daily Average | Total Cubic Metres for Year | Daily Average |
| Amoco Products Company | Whiting, Indiana | 977 885.6 | 2 679.1 | 214 363.4 | 587.3 |
| Ashland Oil Inc. | St. Paul, Minnesota | 116 069.5 | 318.0 | 138 718.7 | 380.1 |
| Cdn. Hydrocarbons Ltd. | Cut Bank, Mt. | 1 313.8 | 3.6 | 1 237.0 | 3.4 |
| Clark Oil | Blue Is., Ill. | 116 352.6 | 318.8 | — | — |
| Conoco Inc. | Billings, Mt. | 511 198.9 | 1 401.0 | 82 738.6 | 266.7 |
| Consumers Power Company | Bay City, Mich. | 75 736.6 | 207.4 | 1 729.5 | 4.7 |
| Farmers Union Central Exchange | Billings, Mt. | 695 214.2 | 1 904.7 | 169 807.2 | 465.2 |
| Getty Oil | Guernsey, Wyo. | 95 984.7 | 262.9 | — | — |
| Koch Refining Co. | Pine Bend, Minnesota | 7 220 290.5 | 19 781.6 | 6 773 273.5 | 18 556.9 |
| Laketon Asphalt Refining Inc. | Laketon, Indiana | 320 007.5 | 876.7 | 161 414.8 | 442.2 |
| Marathon Oil Co. | Detroit, Michigan | 711 621.1 | 1 949.7 | 28 839.0 | 79.0 |
| Marubeni Corp. | Japan | 68 159.2 | 186.7 | — | — |
| Mobil Oil Corp. | Joliet, Ill. | 1 384 651.5 | 3 793.6 | 1 084 495.0 | 2 971.2 |
| Murphy Oil Corp. | Superior, Wisc. | 290 166.2 | 794.9 | 290 698.2 | 796.4 |
| Nippon Oil | Japan | 71 576.6 | 196.1 | — | — |
| Noco Refining | Tonawanda, N.Y. | 202 188.9 | 553.9 | — | — |
| Pilot Petroleum | U.S. Gulf | 71 398.0 | 195.6 | — | — |
| Simmons Refining | Great Falls, Mt. | 102 372.4 | 280.4 | — | — |
| Sun Oil | Marysville, Mich. | 471 500.8 | 1 291.8 | — | — |
| Textrade | Japan | 78 962.9 | 216.3 | — | — |
| Total Oil Ltd. | Alma, Mich. | 24 993.4 | 68.4 | — | — |
| Trans World Oil Ltd. | U.S. Gulf | 243 227.5 | 666.3 | — | — |
| Union Oil Co. of Calif. | Lemont, Ill. | 546 510.9 | 1 497.3 | 67 062.9 | 183.7 |
| United Ref. | Warren, Pa. | 1 174 927.1 | 3 219.5 | — | — |
| Universal Petroleum | U.S. Gulf | 60 701.3 | 166.3 | — | — |
| Other | | 805.8 | 2.2 | 54 292.9 | 148.7 |
| TOTAL | | 15 663 821.3 | 42 832.3 | 9 068 670.7 | 24 845.5 |

O-IV

EXPORT CHARGES IN 1983 FOR CRUDE OIL AND REFINED PETROLEUM PRODUCTS

(\$ PER CUBIC METRE)

| TYPE | JAN. ⁽¹⁾ | FEB. ⁽²⁾ | MARCH | APRIL | MAY | JUNE | JULY | AUG. ⁽³⁾ | SEPT. | OCT. | NOV. | DEC. |
|----------------------------|---------------------|---------------------|-------|-------|-------|-------|-------|---------------------|-------|-------|-------|-------|
| Light, Medium & Condensate | 97.20 | 47.65 | 43.75 | 43.75 | 43.75 | 43.75 | 43.75 | 43.75 | 43.75 | 46.90 | 46.90 | 43.75 |
| Light Canadian Sour | — | 36.80 | 32.90 | 32.90 | 32.90 | 32.90 | 32.90 | 32.90 | 32.90 | 36.05 | 36.05 | 32.90 |
| Reagan | 97.75 | 48.20 | 44.30 | 44.30 | 44.30 | 44.30 | 44.30 | 44.30 | 44.30 | 47.45 | 47.45 | 44.30 |
| Lloydminster-type Blends | 44.40 | 12.00 | 8.10 | 1.80 | 1.80 | 4.95 | 8.10 | 13.10 | 13.10 | 16.25 | 16.25 | 16.25 |
| Wainwright/Kinsella Blend | 43.15 | 9.95 | 6.05 | — | — | 2.90 | 6.05 | 11.05 | 11.05 | 14.20 | 14.20 | 14.20 |
| Fosterton | 51.10 | 19.00 | 15.10 | 8.80 | 8.80 | 11.95 | 15.10 | 20.10 | 20.10 | 23.25 | 23.25 | 23.25 |
| Smiley-Coleville | 45.75 | 11.90 | 8.00 | 1.70 | 1.70 | 4.85 | 8.00 | 13.00 | 13.00 | 16.15 | 16.15 | 16.15 |
| Bow River | 55.15 | 17.45 | 13.55 | 7.25 | 7.25 | 10.40 | 13.55 | 18.55 | 18.55 | 21.70 | 20.10 | 20.10 |
| Midale | 54.25 | 20.15 | 16.25 | 9.95 | 9.95 | 13.10 | 16.25 | 21.25 | 21.25 | 24.40 | 24.40 | 24.40 |
| Chauvin | — | — | — | — | — | — | 6.40 | 11.40 | 11.40 | 14.55 | 14.55 | 14.55 |
| Cold Lake | 24.60 | — | — | — | — | — | — | — | — | 2.15 | 2.15 | 2.15 |
| Motor Gasoline and Jet B | 35.85 | 31.45 | 23.65 | 23.64 | 23.64 | 23.64 | 23.64 | 23.64 | 23.64 | 23.64 | 23.64 | 23.64 |
| Middle Distillates | 37.75 | 31.45 | 23.65 | 23.64 | 23.64 | 23.64 | 23.64 | 23.64 | 23.64 | 31.47 | 31.47 | 23.64 |
| Heavy Fuel Oil ex B.C. | 54.60 | 62.30 | 62.30 | 44.15 | 23.64 | 23.64 | 23.64 | 23.64 | 23.64 | 23.64 | 26.87 | 23.64 |
| Heavy Fuel Oil ex Other | 25.15 | 23.65 | 23.65 | 23.64 | 23.64 | 23.64 | 23.64 | 23.64 | 23.64 | 23.64 | 23.64 | 23.64 |
| Partially Processed Oils | 54.60 | 62.30 | 62.30 | 23.64 | 23.64 | 23.64 | 23.64 | 23.64 | 23.64 | 23.64 | 23.64 | 23.64 |

- 1) Reduction of approximately \$25.25 per cubic metre applicable in respect of crude oil and equivalent exported in January which entered exporting pipeline Systems after 1 January 1983.
- 2) After giving effect to a general reduction of \$11.70 per cubic metre.
- 3) Export charges are effective on 4 August 1983.

O-V

EXCHANGES OF CRUDE OIL AND EQUIVALENT WITH THE UNITED STATES VIA MID-CONTINENT PIPELINE SYSTEMS—1983

| LICENCE HOLDER | EXCHANGE PARTNER | QUANTITY IN CUBIC METRES | | |
|-------------------|--------------------------------|--------------------------|-----------|-----------|
| | | LICENSED | EXPORTED | IMPORTED |
| Imperial Oil Ltd. | Exxon Corporation | 53 227.0 | 25 220.0 | 22 654.9 |
| Imperial Oil Ltd. | Gladieux Refinery | 8 620.0 | 4 577.5 | 2 709.5 |
| Petro Canada Inc. | Conoco Inc. | 120 200.0 | 63 447.1 | 65 908.6 |
| Shell Canada Ltd. | Conoco Inc. | 404 018.7 | 372 742.4 | 360 334.3 |
| Shell Canada Ltd. | Farmers Union Central Exchange | 255 139.6 | 154 878.0 | 147 372.9 |
| Shell Canada Ltd. | Shell Oil Co. | 290 053.0 | 344 717.0 | 346 789.5 |
| Shell Canada Ltd. | Simons Crude Oil Co. | 11 832.7 | 10 351.9 | 10 345.0 |
| TOTAL | | 1 143 091.0 | 975 933.9 | 956 114.7 |

O-VI

EASTERN CANADIAN EXCHANGE SHIPMENTS — 1983

| LICENCE HOLDER | EXCHANGE PARTNER | QUANTITY IN CUBIC METRES | | |
|----------------------|-------------------|--------------------------|-----------|-----------|
| | | LICENSED | EXPORTED | IMPORTED |
| Texaco Canada Inc. | Texaco Inc. | 190 697.0 | 144 163.1 | 142 400.0 |
| Ultramar Canada Inc. | Conoco Inc. | 580 350.0 | 581 100.8 | 470 487.3 |
| Ultramar Canada Inc. | Golden Eagle Inc. | 200 694.5 | 72 115.5 | 72 115.5 |
| TOTAL | | 1 031 741.5 | 797 378.4 | 685 002.8 |

O-VII

EXPORTS OF LICENSED PETROLEUM PRODUCTS AND IMPORTS OF HEAVY FUEL OIL—1983 (CUBIC METRES)

| MONTH | EXPORTS | | | | | | IMPORTS HEAVY FUEL OIL |
|-----------|-------------------------------|--------------------------------|-------------------|----------------------|-----------|-------------|---------------------------------|
| | PARTIALLY PROCESSED OIL | MOTOR GASOLINE AND JET B | HEAVY FUEL OIL | MIDDLE DISTILLATE | ASPHALT | TOTAL | |
| January | 9 975.7 | 30 808.9 | 116 507.6 | 44 137.9 | 432.0 | 201 862.1 | 150 463.2 |
| February | 20 046.1 | 42 232.4 | 137 858.0 | 145 797.9 | 871.7 | 346 806.1 | 210 816.0 |
| March | 20 125.3 | 64 629.6 | 222 634.7 | 101 319.7 | 1 544.0 | 410 253.3 | 121 930.7 |
| April | 20 140.0 | 146 179.8 | 203 116.6 | 95 572.4 | 5 569.8 | 470 578.6 | 64 969.8 |
| May | 36 559.6 | 239 381.4 | 123 874.1 | 214 316.2 | 15 401.0 | 629 532.3 | 10 419.6 |
| June | 45 130.1 | 181 932.4 | 122 764.8 | 277 167.1 | 28 044.7 | 655 039.1 | 72 549.3 |
| July | 9 834.2 | 122 600.4 | 128 942.6 | 252 193.2 | 27 944.6 | 541 515.0 | 38 334.1 |
| August | 9 928.4 | 110 382.8 | 110 766.7 | 256 423.9 | 40 980.7 | 528 420.5 | 106 202.3 |
| September | 19 346.6 | 81 005.6 | 165 663.8 | 149 270.1 | 32 408.8 | 447 694.9 | 97 347.6 |
| October | 29 928.2 | 163 107.4 | 117 176.5 | 232 892.8 | 25 747.7 | 568 852.6 | 80 161.7 |
| November | 21 156.9 | 48 138.3 | 108 338.9 | 177 973.9 | 6 408.5 | 362 016.5 | 76 874.8 |
| December | 61 209.5 | 116 224.4 | 91 366.3 | 188 152.3 | 24 062.5 | 481 015.0 | 120 930.0 |
| TOTAL | 303 380.6 | 1 346 623.4 | 1 649 010.6 | 2 135 217.4 | 209 416.0 | 5 643 648.0 | 1 150 999.1 |

O-VIII

EXPORTS OF LICENSED AVIATION AND MARINE FUELS USED IN INTERNATIONAL TRANSPORTATION (CUBIC METRES)

| MONTH | JET A ⁽¹⁾ | JET B ⁽¹⁾ | HEAVY FUEL OIL | MARINE DIESEL/ GASOIL | TOTAL |
|--------------------|----------------------|----------------------|-------------------|--------------------------|---------|
| January | 31 777 | 4 515 | 44 994 | 15 394 | 96 680 |
| February | 33 630 | 7 944 | 43 626 | 11 812 | 97 012 |
| March | 18 467 | 6 481 | 40 625 | 16 661 | 82 234 |
| April | 49 663 | 6 684 | 71 840 | 26 113 | 154 300 |
| May ⁽²⁾ | — | — | — | — | — |
| June | — | — | — | — | — |
| July | — | — | — | — | — |
| August | — | — | — | — | — |
| September | — | — | — | — | — |
| October | — | — | — | — | — |
| November | — | — | — | — | — |
| December | — | — | — | — | — |
| TOTAL | 133 537 | 25 624 | 201 085 | 69 980 | 430 226 |

(1) Jet fuel exports exclude fuel consumed by Canadian airlines.

(2) Effective 1 May 1983, marine and aviation bunkers used in international transportation no longer subject to export licensing.

E-I

CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY FOR INTERNATIONAL POWER LINES PURSUANT TO SECTION 44 ISSUED DURING 1983

No certificates were issued in 1983

E-II

ORDER RELATING TO INTERNATIONAL POWER LINES ISSUED DURING 1983

| TYPE OF ORDER | APPLICANT | FACILITIES | ISSUED | ORDER NO. |
|--|------------------|--|--------------|--------------|
| Order under the International Power Line Regulations | 1. Ontario Hydro | Order approving a change in the description of the existing international power line authorized by Order XE-2-72 | 24 Nov. 1983 | AO-1-XE-2-72 |

E-III

LICENCES TO EXPORT ELECTRIC POWER AND ENERGY PURSUANT TO SECTION 82 ISSUED DURING 1983

| APPLICANT | CLASS | MEGAWATTS | ANNUAL GIGAWATT-HOURS | TERM | | APPLICATION HEARD | ISSUED | LICENCE NO. |
|--|-------|-----------|-----------------------|----------|----------|--------------------|--------------|-------------|
| | | | | FROM | TO | | | |
| 1. The New Brunswick Electric Power Commission | Firm | 130 | 1 138 | 83-01-27 | 95-10-31 | 8 Nov.—9 Nov. 1982 | 27 Jan. 1983 | EL-150 |

E-IV

ORDERS RELATING TO EXPORT OF ELECTRIC POWER AND ENERGY ISSUED DURING 1983

Orders Issued Pursuant to Section 7 of the Regulations under Part VI of the Act

| APPLICANT | CLASS | KILOWATTS | ANNUAL KILOWATT HOURS | TERM | | ISSUED | ORDER NO. |
|---|------------------|-----------|-----------------------|----------|----------|--------------|-----------|
| | | | | FROM | TO | | |
| 1. Canadian Niagara Power Company, Limited. | Interruptible | 75 000 | 75 000 000 | 83-04-01 | 84-09-30 | 23 Mar. 1983 | ELO-175 |
| 2. Manitoba Hydro | Firm | 12 | 15 000 | 83-08-01 | 86-07-31 | 9 May 1983 | ELO-176 |
| 3. Boise Cascade Canada Ltd. | Interruptible | 8 000 | 70 000 000 | 83-07-01 | 86-06-30 | 30 June 1983 | ELO-177 |
| 4. Hydro-Québec | Carrier Transfer | 4 000 | 20 000 000 | 83-11-01 | 84-06-30 | 1 Nov. 1983 | ELO-178 |

ORDERS RELATING TO EXPORT OF ELECTRIC POWER AND ENERGY ISSUED DURING 1983

Amending Orders Issued Relative to Power and Energy

| APPLICANT | ASSOCIATED LICENCE OR ORDER | ISSUED | ORDER NO. | COMMENTS |
|---|-----------------------------|--------------|--------------|--|
| 1. St. Lawrence Power Company | EL-114 | 17 Mar. 1983 | A0-2-EL-114 | Amendment increasing the amount of capacity to be exported under Licence EL-114. |
| 2. The New Brunswick Electric Power Commission | EL-140 | 23 Mar. 1983 | A0-2-EL-140 | Amendment reflecting the intent of the Board at the time it inserted Condition 5 in the licence. |
| 3. The New Brunswick Electric Power Commission | EL-137 | 6 July 1983 | A0-1-EL-137 | Amendment extending the term of the licence by one year. |
| 4. The New Brunswick Electric Power Commission | EL-139 | 6 July 1983 | A0-1-EL-139 | Amendment extending the term of the licence by one year. |
| 5. The New Brunswick Electric Power Commission | EL-140 | 4 Aug. 1983 | A0-3-EL-140 | Amendment including a new Power Purchase Agreement with Central Maine Power Company. |
| 6. The New Brunswick Electric Power Commission | EL-64 | 20 Oct. 1983 | A0-2-EL-64 | Amendment varying the annual time periods during which energy may be exported. |
| 7. Maine and New Brunswick Electrical Power Company Limited | EL-22 | 20 Oct. 1983 | A0-1-EL-22 | Amendment authorizing an increase in capacity charge. |
| 8. Hydro-Québec | EL-113 | 17 Nov. 1983 | A0-2-EL-113 | Amendment extending the term of the licence by 8 months. |
| 9. Ontario Hydro | ELO-166 | 24 Nov. 1983 | A0-1-ELO-166 | Amendment increasing the quantity of power and energy authorized by ELO-166. |

E-V

EXPORTS OF ELECTRIC ENERGY — CALENDAR YEAR 1983

| EXPORTER | LICENCE NUMBER | MEGAWATT HOURS | | | | | REPORTED DOLLAR VALUE OF EXPORT | |
|---|---|---|---|--|--|---|---|--|
| | | LICENCE AUTHORIZATION | | GROSS ENERGY EXPORTED | | | | |
| | | FIRM | INTER-RUPTIBLE | FIRM | INTER-RUPTIBLE | EXCHANGE ⁽¹⁾ | FIRM | INTER-RUPTIBLE |
| 1. Maine and New Brunswick Electrical Power Company Limited | EL-22 EL-23 | 250 000 — | — 25 000 | 126 279 — | — — | — — | 1 041 873 — | — — |
| 2. Fraser Inc. | EL-122 EL-123 | 400 000 — | — 50 000 | 299 370 — | — — | — — | 10 603 379 — | — — |
| 3. The New Brunswick Electric Power Commission | AO-2-EL-64 AO-1-EL-137 EL-138 AO-1-EL-139 AO-3-EL-140 EL-141 EL-142 EL-143 EL-144 EL-145 EL-150 ELO-169 to ELO-171 | 3 504 000 876 000 876 000 92 000 — 1 226 400 140 000 — 250 000 — 1 138 000 300 | — — — — 6 482 400 ⁽²⁾ — — 300 000 — — — — | 512 933 695 498 695 498 37 810 — — — — — 103 395 212 | — — — — 2 757 367 — — 78 097 — — — | -1 138 -11 234 -11 234 -2 444 529 419 461 — -39 869 25 016 -1 837 -1 713 — | 34 757 257 43 926 545 43 926 545 2 591 258 — — — — — 5 783 652 15 828 | — — — — 128 608 150 — — 4 386 961 — 278 129 — — |
| TOTAL NEW BRUNSWICK | | | | 2 470 995 | 2 840 449 | 375 537 | 142 646 337 | 133 273 240 |
| 4. Cedars Rapids Transmission Company Limited | ELO-174 | 20 000 | — | — | — | — | — | — |
| 5. Hydro-Québec | EL-96 AO-2-EL-113 EL-131 EL-132 EL-133 ELO-154 to ELO-156 and ELO-158 to ELO-165 ELO-178 | 3 000 000 — — 160 200 — 1 752 20 000 | — 10 200 000 ⁽³⁾ 320 000 — 525 000 ⁽⁴⁾ — — | 3 000 000 — — 63 260 — 315 — | — 7 027 883 — — 134 237 — — | 663 — — — — 1 816 — | 115 117 302 — — 2 235 869 — 14 081 — | 217 219 316 — — 5 090 944 — — |
| TOTAL QUÉBEC | | | | 3 063 575 | 7 162 120 | 2 479 | 117 367 252 | 222 310 260 |
| 6. Ontario Hydro | EL-32 EL-134 EL-135 EL-136 AO-1-ELO-166 | 15 000 — 10 500 000 — 200 | — 10 000 000 — 20 000 000 ⁽⁵⁾ — | 963 — 4 155 596 — 4 | — — — 7 741 188 — | -211 988 — 27 845 — — | 1 926 — 174 405 914 — 224 | — — — 272 647 361 — |
| 7. Canadian Niagara Power Company Limited | AO-1-EL-124 AO-1-EL-125 ELO-175 | 130 000 — — | — 380 000 ⁽⁶⁾ 100 000 | — 353 252 — | — 11 183 — | — — — | — — — | 13 491 740 — — |
| 8. Boise Cascade Canada Ltd. | ELO-177 | — | 70 000 | — | — | — | — | — |
| 9. The Detroit and Windsor Subway Company | ELO-173 | 2 000 | — | 1 072 | — | — | — | — |
| 10. The Canadian Transit Company | ELO-167 | 25 | — | 24 | — | — | — | — |

E-V (cont'd)

EXPORTS OF ELECTRIC ENERGY — CALENDAR YEAR 1983

| EXPORTER | LICENCE NUMBER | MEGAWATT HOURS | | | | | REPORTED DOLLAR VALUE OF EXPORT | |
|--|--|---|--|--|---|--|---|---|
| | | LICENCE AUTHORIZATION | | GROSS ENERGY EXPORTED | | | | |
| | | FIRM | INTER-RUPTIBLE | FIRM | INTER-RUPTIBLE | EXCHANGE ⁽¹⁾ | FIRM | INTER-RUPTIBLE |
| 11. St. Lawrence Power Company | AO-2-EL-114 EL-115 EL-116 | — — — | 250 000 150 000 150 000 | — — — | — 27 036 — | 99 681 — 1 228 | — — — | 666 172 — — |
| 12. Dow Chemical of Canada Limited | AO-1-EL-121 | — | 438 000 | — | — | — | — | — |
| TOTAL ONTARIO | | | | 4 157 659 | 8 121 476 | -72 051 | 174 408 064 | 286 805 273 |
| 13. Manitoba Hydro | EL-97 EL-98 EL-99 EL-100 EL-101 EL-102 EL-103 ELO-172 and ELO-176 | — 876 000 — — — — — 7 899 | 1 500 000 — 262 800 800 000 2 500 000 5 000 000 12 000 000 ⁽⁷⁾ — | — 202 584 262 800 — — — 3 897 695 1 722 | 1 602 663 — — — — — 20 038 — | — — — — 6 775 — 40 178 | — 5 706 602 3 564 101 — — — — 57 959 507 | 21 840 828 — — — — — — — |
| TOTAL MANITOBA | | | | 467 106 | 5 500 358 | 26 813 | 9 310 881 | 79 800 335 |
| 14. Saskatchewan Power | EL-117 EL-119 EL-120 | 438 000 — 876 000 ⁽⁸⁾ | — 876 000 ⁽⁸⁾ — | 45 500 — — | — 15 913 — | — 19 787 — | 1 473 745 — — | 174 319 — — |
| TOTAL SASKATCHEWAN | | | | 45 500 | 15 913 | 19 787 | 1 473 745 | 174 319 |
| 15. British Columbia Hydro and Power Authority | EL-126 EL-127 EL-128 EL-129 EL-130 ELO-168 | 32 000 2 000 000 3 000 000 — — 600 | — — — 525 600 10 000 00 ⁽⁹⁾ — | 13 248 — — — 349 860 2 553 567 339 | — — — — — — | — 1 176 953 — — 392 136 — | 503 807 — — — — 41 997 | — — — 6 939 507 69 603 378 — |
| 16. Cominco Ltd. | EL-146 EL-147 EL-148 EL-149 | 50 000 — 250 000 — | — 1 100 000 — 1 000 000 | — 145 330 — — | — 1 770 — — | — — — — | — — — — | 3 900 000 — — — |
| 17. West Kootenay Power and Light Company | ELO-157 | 50 | — | 30 | — | — | 1 305 | — |
| TOTAL BRITISH COLUMBIA | | | | 13 617 | 3 048 757 | 1 570 859 | 547 109 | 80 442 885 |
| TOTAL CANADA ⁽¹⁰⁾ | | | | 10 218 452 | 26 689 073 | 1 923 424 | 445 753 388 | 802 806 312 |

- (1) Exchange includes inadvertent and circulating flow, equichange, storage adjustment transfer and wheeling or carrier transfer.
(2) Total exports should not exceed 6 482.4 GW.h when combined with exports under Licences EL-64, EL-137, EL-138 and EL-150.
(3) Total exports should not exceed 10 200 GW.h when combined with export under Licence EL-96.
(4) Total exports should not exceed 525 GW.h when combined with export under Licence EL-132.
(5) Total exports should not exceed 20 000 GW.h when combined with export under Licence EL-135.
(6) Total exports should not exceed 380 GW.h when combined with export under Licence EL-124.
(7) Total exports should not exceed 12 000 GW.h when combined with exports under Licences EL-97, EL-98, EL-99, EL-100, EL-101 and EL-102.
(8) Total exports under Licences EL-119 and EL-120 should not exceed 876 GW.h when combined together.
(9) Total exports should not exceed 10 000 GW.h during the water year (1 October to 30 September) when combined with exports under Licences EL-128 and EL-129.
(10) Excludes 641 108 \$ revenue for wheeling, transmission, unit rental and storage transfer charges.

E-VI

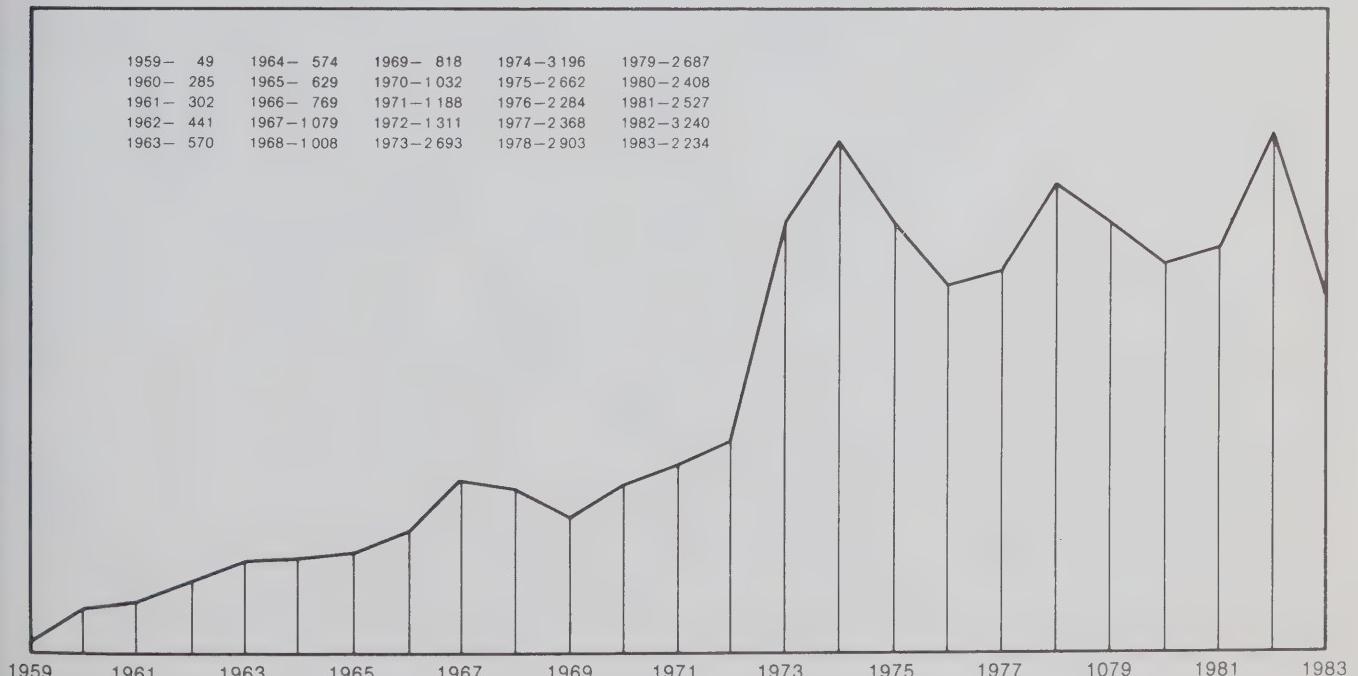
TOTAL CANADIAN ELECTRIC ENERGY SUPPLY AND TRADE WITH THE UNITED STATES — CALENDAR YEAR 1983

| CATEGORY | GIGAWATT HOURS |
|--|---|
| Electric Energy Generation for all Canada | 390 000 (preliminary) |
| Electric Energy Importation from U.S.A. | 3 179 " |
| Total Canadian Electric Energy Supply | 393 179 " |
| Electric Energy Export (Gross) to U.S.A. | 10 218 (firm) 2.6% of Canadian supply 26 689 (interruptible) 6.8% of Canadian supply 1 923 (exchange) 0.5% of Canadian supply |
| Total Electric Energy made available in Canada | 354 349 (preliminary) |

S-1

TOTAL NUMBER OF BOARD CERTIFICATES PERMITS AND AUTHORIZATIONS BETWEEN 1959 AND 1983

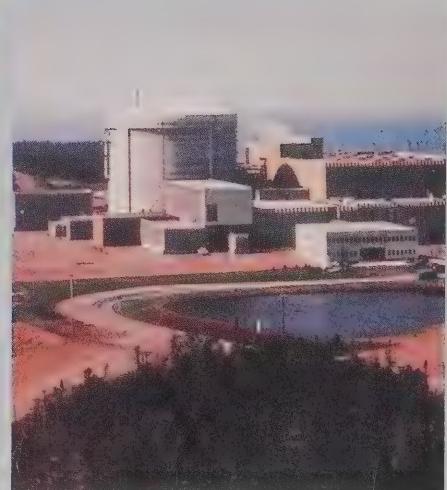
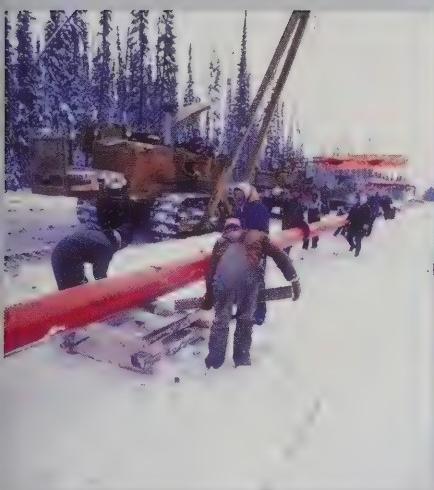
| | | | | |
|-----------|-------------|-------------|-------------|-------------|
| 1959— 49 | 1964— 574 | 1969— 818 | 1974— 3 196 | 1979— 2 687 |
| 1960— 285 | 1965— 629 | 1970— 1 032 | 1975— 2 662 | 1980— 2 408 |
| 1961— 302 | 1966— 769 | 1971— 1 188 | 1976— 2 284 | 1981— 2 527 |
| 1962— 441 | 1967— 1 079 | 1972— 1 311 | 1977— 2 368 | 1982— 3 240 |
| 1963— 570 | 1968— 1 008 | 1973— 2 693 | 1978— 2 903 | 1983— 2 234 |



Canada

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National Energy Board



1984 Annual Report

NEB Profile

The National Energy Board is an independent federal agency that was created by an Act of Parliament on 2 November 1959. In the past quarter-century, it has played an increasingly important role in the development that has taken place in Canada's energy sector.

The Board's regulatory powers under the National Energy Board Act include the licensing of oil, gas, and electricity exports, the certification of interprovincial and international pipelines and international power lines, and the setting of tolls for oil and gas pipelines under federal jurisdiction.

The Act also requires that the Board review the Canadian supply of all major energy commodities, with emphasis on electricity, oil, and natural gas and their by-products, as well as the demand for Canadian energy in Canada and abroad.

The Board also has specific responsibilities under the Northern Pipeline Act and the Energy Administration Act.

The Board's head office is at 473 Albert Street, Ottawa, Canada, K1A 0E5. Telephone (613) 993-6936.

Cover:

Norman Wells pipeline construction (Photo: IPL)

Eastcoast offshore drilling rig (Photo: Mobil)

*Point Lepreau generating station near Saint John, N. B.
(Photo: N. B. Power)*

National Energy Board

1984

29 March 1985

The Honourable Pat Carney, P.C., M.P.
Minister of Energy, Mines and Resources
Ottawa, Ontario

Dear Miss Carney:

In accordance with the provisions of Section 91
of the National Energy Board Act, the Revised
Statutes of Canada, 1970, chapter N-6, I am
pleased to submit the Annual Report of the
National Energy Board for the year ended
31 December 1984.

Yours sincerely,



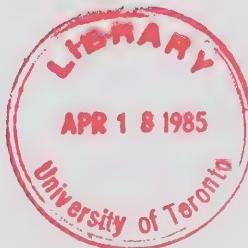
C. Geoffrey Edge,
Chairman

Metric Conversion Table

The National Energy Board uses the International System of Units (SI). The following conversion table is provided for the convenience of any readers who may be more familiar with the Imperial System.

Approximate Conversion Factor

| | | |
|-------------------------|---|--|
| 1 metre (m) | = | 3.28 feet |
| 1 kilometre (km) | = | 0.62 mile |
| 1 millimetre (mm) | = | 0.039 inch |
| 1 cubic metre (m^3) | = | 6.3 barrels |
| 1 cubic metre (m^3) | = | 35.3 cubic feet |
| 1 litre (L) | = | 0.22 gallon |
| 1 kilogram (kg) | = | 2.22 pounds |
| 1 gigajoule (GJ) | = | 0.95 MMBtu (950 cubic feet at 1000 Btu/cf) |
| gigajoule(GJ) | = | 10^9 J |
| terajoule(TJ) | = | 10^{12} J |
| petajoule(PJ) | = | 10^{15} J |
| exajoule(EJ) | = | 10^{18} J |



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The Chairman's Letter



C. Geoffrey Edge,
Chairman

A year for pause and reorientation

Nineteen eighty-four has been a very special year for the National Energy Board. It was just twenty-five years ago that the Board was created by an Act of Parliament, its mandate twofold — regulatory and advisory. The Board marked this important anniversary by issuing a publication entitled: "Twenty-five Years in the Public Interest". Since its beginning in 1959 the Board has gone on to play an increasingly important role in the development of Canada's energy resources.

An Improved Climate for Energy Projects

Nineteen eighty-four in the energy industry was a year for pause and reorientation. Interest rates and the rate of inflation continued to recede, restoring some of the confidence necessary for launching new energy projects. On the other hand, crude oil prices on the world scene were uncertain and tended to slide in the short run with no clear view as to their prospects of recovery in the long run. A firming of oil prices would appear to be another prerequisite for oil and natural gas projects to proceed. The energy industry was appraising not only the current economic parameters, but also the political ones as the new government began to develop its energy policies.

During this period of transition, the only major pipeline construction project underway in Canada was the Interprovincial pipeline from Norman Wells in the Northwest Territories to northern Alberta. No hearings were held on new ones. The absence of major new projects was, however, counterbalanced by the large and increasing export of energy during the year. Our net exports of oil, gas and electricity approached

\$8.1 billion. Energy exports constituted about 11 percent of all exports and increased by \$1.3 billion over last year, mainly oil and oil products and electricity.

Oil

Strong U.S. demand for Canadian heavy oil helped us to attain new export levels, while straining the capacity of pipelines to move the oil. Licensing of light crude oil exports, while maintaining shut-in production at a minimum, became extremely difficult in the face of weak U.S. demand, uncertain prices for light crude oil, and rigidities inherent in the present pricing system.

Natural Gas

The highlight in an eventful year for natural gas was the attainment of a consensus on a new export pricing policy which, at the same time as meeting Canada's needs, was in harmony with United States import guidelines. Freed of the administered uniform border price, exporters and importers scrambled to renegotiate their contracts in September and early October and to bring them forward for regulatory consideration. The Board devised expedited procedures for reviewing the licences under new government guidelines, evaluated the proposals, held public hearings when necessary, rendered decisions and made recommendations to Cabinet which were accepted by 1 November when the new contracts and licences came into effect. This was a prodigious task for the industry and the Board, but the benefits began to show immediately in the increased volumes of gas being exported, marking an important step towards the recovery of markets previously lost when prices were too high.

Electricity

Difficulties experienced by the United States electricity industry, particularly in the nuclear sector, continued to provide an opportunity in 1984 for Canada to export surplus electricity to the United States. Our surplus is largely the result of generating facilities having been built some years earlier in anticipation of higher Canadian growth in demand than that which actually materialized. The Board recommended Governor-in-Council approvals for the export of electricity from Quebec and British Columbia during the year; a decision on an export from Manitoba was pending at year end.

Supply and Demand for Energy

A staff report issued in the latter part of the year entitled *Canadian Energy: Supply and Demand, 1983 to 2005* indicated that during that period of time Canada could become self-sufficient in oil if frontier and tar sand projects were successfully developed. Energy consumption is projected to grow at 1.6 percent a year compared with 5 percent from 1950 to the 1970s. The report's analysis, based on input from 65 written submissions solicited from industries, provincial governments, major consumer and public interest groups representing a broad cross-section of the energy community, is a major updating of the Board's 1981 report.

Regulatory Reform

One of the Board's major activities which gained momentum in 1984 was the tailoring of its regulatory process to better suit the changing energy scene.

In an earlier proposal to project sponsors, the Board suggested that a preliminary hearing be available for major projects if sponsors wished to use this approach; the process would reduce the risk of applicants becoming involved in long and expensive hearings before learning whether the ultimate decision would be positive or negative. Exploratory discussions were held with various project sponsors on this subject.

During the year, the Board increased its coordination and cooperation with other departments and agencies of the federal government, and with provincial and territorial governments, in order to reduce the burden of regulatory overlap.

Offshore pipeline safety, design, construction and operating regulations were drawn up to

assist applicants to prepare proposals to connect Sable Island gas to markets.

Similarly, the Board's onshore pipeline regulations of long standing were overhauled and were under discussion with industry at year end.

An important innovation was to provide applicants with the opportunity to seek waivers from the Board of any requirements for information where regulations and schedules to the Rules of Practice and Procedure specify information not considered to be sufficiently relevant to the project proposed. Industry was offered the opportunity to consult with Board staff on this subject prior to the application being filed with the Board.

The Board's Rules of Practice and Procedure were simplified, as were the schedules of information required of pipeline companies applying for a certificate of public convenience and necessity.

Norman Wells pipeline construction (Photo: Esso Resources)



During the year, the Board initiated a review of its approach to the regulation of small pipelines and the appropriate means by which it could reduce the burden of unnecessary regulation. Proposals to achieve this goal were sent to industry for comment early in 1985.

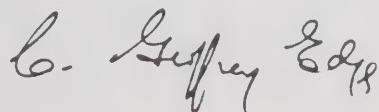
In 1983, volume controls had been lifted on short term exports of butane, and industry was consulted during 1984 on a similar approach to propane. Following that consultation, the Board decided to remove volume limitations on export orders for propane; announcement of the change was made just after year end.

Hearings were launched on the method of regulation of tolls of TransCanada PipeLines and Westcoast Transmission to determine if existing procedures needed to be changed to make them more relevant to present circumstances. These hearings continued into 1985.

Towards the end of the year, the Board was examining possible changes in its role in anticipation of the deregulation of oil exports.

Conclusion

In 1985, it is expected that emerging government policies will stimulate activities in the energy industry, and the Board is preparing itself to meet the new demands which may be placed on it. In this regard, we will be continuing to adapt the regulatory role of the Board to an energy sector where economic forces and private industry will be playing increasing and important roles.



C. Geoffrey Edge

Functions and Responsibilities



Interior of LG 3 generating station (Photo: Hydro - Québec)

The Board takes into consideration all relevant matters in considering applications for export authorizations

Responsibilities Under the National Energy Board Act

Under the National Energy Board Act of 1959 and subsequent amendments, the Board has two principal responsibilities:

- to regulate specific matters concerning oil, gas and electricity in the public interest, and
- to advise the Government on the development and use of energy resources.

The Board on its own initiative may hold inquiries into a particular aspect of the energy situation and prepare reports for the Government, Parliament, or the general public.

The Board also carries out studies and prepares reports at the request of the Minister.

The regulatory role of the Board includes:

Export Licences and Orders

The National Energy Board Act requires the Board to take into consideration all relevant matters in considering applications for export authorizations. It must satisfy itself that the quantities of energy do not exceed the surplus remaining after allowing for reasonably foreseeable Canadian requirements.

Certificates of Public Convenience and Necessity for Pipelines and Power Lines

The Board grants certificates to construct and operate interprovincial and international oil, gas, and petroleum products pipelines and international electric power lines. Designated interprovincial electric power lines may, by order of the Governor in Council, come under the relevant provisions of the NEB Act. Before a certificate is issued, the Board is required to hold a public hearing.

Detailed Routing - Pipelines and Power Lines

As a result of amendments to the NEB Act in 1983, new expropriation and compensation procedures have been established to govern the obtaining of rights-of-way for pipelines and for international and designated interprovincial power lines. Among other things, these changes provide those whose lands may be adversely affected with an opportunity to present their view at a local public hearing. The Board is then required to take the evidence presented at such hearings into account in reaching its decisions as to the acceptability of the proposed detailed routing.

Pipeline and Power Line Orders

The Board may approve minor additions or modifications to existing pipeline systems without calling a public hearing. These are restricted to sections, branches, and extensions of pipelines not more than 40 kilometres in length, and ancillary installations such as tanks, pumps, compressors, meter stations, and communications systems. The Board may also by order authorize the construction and operation of international power lines of voltage not exceeding 50 kilovolts.

Pipeline Utility Crossing Orders

For reasons of safety, to protect the environment and the integrity of other utility services, no pipeline may cross or be crossed by another utility without prior authorization of the Board. If a pipeline is to cross a navigable water or a railway, the Minister of Transport or the Canadian Transport Commission must give permission. Crossings of the facilities of other utilities may only be made with the authorization of the Board after consideration of all the relevant information.

Pipeline Safety

The Board's Oil and Gas Pipeline Regulations provide for the safe design, construction, and operation of pipelines under Board jurisdiction. To ensure high standards in the safety of pipeline construction and operation, the Board carries out inspection programs and conducts investigations and reviews of pipeline system performance.

Environmental Protection

The Board looks very closely at the potential environmental impact of the construction and operation of oil pipelines, gas pipelines, and international power lines to ensure that the environment is protected during all phases of a project. It takes into consideration the impact on permafrost terrain, erosion and siltation at water crossings, as well as the impact on wildlife and fish, preservation of archaeological sites, air emissions, noise, and the protection of agricultural soils.

Socio-Economic Impact

The Board monitors socio-economic action plans, conducts investigations, and reviews pipeline company performance where warranted. It has also issued guidelines for regional socio-economic impact assessments of gas or oil pipeline projects.



Pipeline looping in the Fraser Valley
(Photo: Westcoast Transmission)

Regulation of Pipeline Tolls, Tariffs and Accounting Practices

The Board regulates the tolls and tariffs of pipeline companies under federal jurisdiction to ensure that the tolls are just and reasonable and not discriminatory.

Responsibilities Under the Energy Administration Act

Under the Energy Administration Act, the Board imposes and collects charges on the export of crude oil and certain petroleum products and administers the price of natural gas in interprovincial and export trade.

Responsibilities Under the Northern Pipeline Act

The Board's responsibilities regarding the Alaska Natural Gas Transportation System relate mainly to financing and tariffs, approval of pipe specifications, granting of leave to open orders, and regulation of the operation of the line.

Public Access and Participation

The Board is a Court of Record which holds public hearings at which applicants and interested persons have full rights of participation in the language of their choice. In order that parties have an opportunity to discuss their concerns or questions, the Board gives ample notice of the hearings and provides sufficient time for requests for information to be answered.

The record of a proceeding is public. The only exception is when an applicant asks that price or contract conditions be kept confidential for reasons of competition, in which case the Board may do so for a limited period of time.

The Board publishes quarterly Regulatory Agendas, which provide advance notice of forthcoming regulatory actions and information on the status of ongoing proceedings. It also publishes Information Bulletins on its activities and procedures.

Implementation of Board Decisions

When, after a public hearing, the Board decides to grant a certificate for a pipeline or a power line or to issue a licence for the export of natural gas or electricity, the import of natural gas, or the export of oil for a period exceeding one year, it reports its decision to the Governor in Council through the Minister of Energy, Mines and Resources. If a certificate is approved, it is then issued by the Board. In the case of export or import applications, licences issued by the Board go into effect on approval by the Governor in Council. If the Board refuses an application, it is not subject to referral to the Governor in Council.

Because of the special nature of the trade in crude oil and petroleum products, specifically the use of short-term contracts and the need to make decisions on a daily basis, most decisions on oil export controls are made directly by the Board without reference to the Governor in Council.

Applications for orders authorizing the export of relatively small quantities of ethane, propane, butanes, and ethylene, for periods up to one year, of a maximum of three billion cubic metres of natural gas in any one year for a period not exceeding two years, and of small amounts of electricity for up to three years may also be dealt with by the Board without reference to the Governor in Council.

Decisions on tolls and tariffs are made by the Board without reference to the Governor in Council.

Reviews and Appeals of Board Decisions

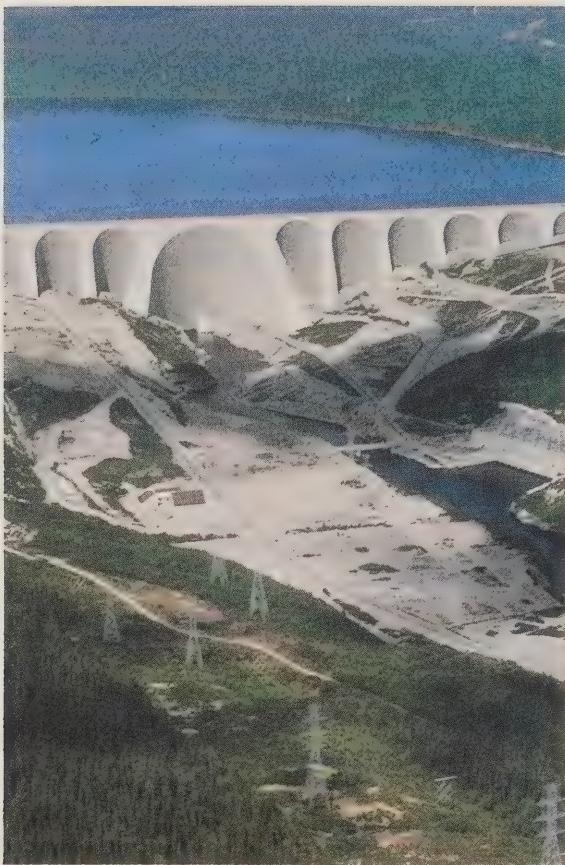
The Board may review, rescind or change any order or decision made by it, or may re-hear any application before deciding on it. It may also change a certificate or licence issued by it, but no such change is effective until approved by the Governor in Council. Parties may apply to the Board requesting that an order or decision be reviewed, or a licence or certificate be amended.

A decision or order of the Board may be appealed to the Federal Court of Appeal providing the appeal is based upon a point of law or jurisdiction.

Awarding of Costs

The Board does not award costs to participants at its proceedings. However, in the case of detailed route hearings, the Board may establish the appropriate level of compensation to be paid to the landowner for costs associated with participation in the hearing.

Organization



Manic 5 hydro electric dam (Photo: Hydro - Québec)

The board's budget in fiscal year 1984-85 is \$25.3 million with a person-year allocation of 458

Members

| | |
|------------------------------|-------------------------|
| C.G. Edge ¹ , | Chairman |
| R.F. Brooks, | Vice-Chairman |
| L.M. Thur, | Associate Vice-Chairman |
| W.A. Scotland ² , | Associate Vice-Chairman |
| J. Farmer, | Associate Vice-Chairman |
| A.D. Hunt, | Associate Vice-Chairman |
| J.R. Jenkins, | Member |
| J.R. Hardie, | Member |
| J.L. Trudel, | Member |
| R.B. Horner, Q.C., | Member |
| A.B. Gilmour, | Member |
| W.G. Stewart, | Member |
| E.S. Bell ³ , | Temporary Member |
| J. Heath ³ , | Temporary Member |
| R. Laking ³ , | Temporary Member |

-
1. The Governor in Council reappointed Mr. C.G. Edge as Chairman of the Board effective 1 January 1985 for a further period of two years.
 2. Mr. Scotland is the Board's Designated Officer with the Northern Pipeline Agency and is based in Calgary.
 3. The Governor in Council appointed Mr. E.S. Bell, Mr. J. Heath, and Mr. R. Laking as temporary Members of the Board to act as three of the five members of the panel which will conduct an inquiry into the Northern Canada Power Commission rates.

Standing Panels and Committees

The Board assigns much of its non-hearing regulatory workload to five standing panels, each composed of a quorum of three Board Members. In addition, certain Board Members and senior staff are involved in the work of committees which deal either with issues of a broad regulatory nature or with matters affecting the internal management of the Board.

The Standing Panels refer to the whole Board any matters that they feel may raise questions of general policy or require a public hearing. Except as noted, Panels do not issue or amend certificates or licences, or decide matters which would require the holding of a public hearing.

Oil Panel

| Members | Responsibilities |
|----------------|---|
| J.R. Hardie | Issues licences for the export of oil and oil products for a period of up to one year ¹ ; issues orders for the interprovincial movement and allocation of western Canadian crude oil and for exchanges; issues licences for the import of heavy fuel oil into Canada, and advises the Minister respecting oil-related energy matters; exercises the powers of the Board under those parts of the Energy Administration Act that pertain to the export charge on crude oil and oil products. |
| J.R. Jenkins | |
| R.B. Horner | |
| W.G. Stewart | |

1. The Panel may issue a licence for more than a year, without a public hearing, for the export of oil products produced under an agreement to process imported crude oil. The Panel may also issue, without a public hearing, and without the approval of the Governor in Council, a licence for up to two years for the export of heavy crude oil.

Note:

1. The first-named member of each panel is the Panel Chairman, the fourth is the Alternate Member.
2. The Chairman is an ex-officio member of all Panels and Committees.

Gas Panel

L.M. Thur
R.B. Horner
A.B. Gilmour
A.D. Hunt

Exercises the powers of the Board in matters relating to natural gas, liquefied natural gas, synthetic natural gas, propane, butanes, ethane, and ethylene. In addition, it advises the Minister under section 22 of the Act respecting the export price of natural gas.

Electrical Panel

J. Farmer
J.R. Hardie
J.L. Trudel
R.F. Brooks

Exercises the powers of the Board in all matters relating to electricity.

Pipeline Panel

J.R. Jenkins
A.B. Gilmour
W.G. Stewart
R.F. Brooks

Exercises the powers of the Board in matters relating to the construction, operation, and maintenance of oil and gas pipelines, including pipeline safety and environmental considerations.

Financial Regulatory Panel

A.D. Hunt
J.L. Trudel
W.G. Stewart
J. Farmer

Exercises the powers of the Board with respect to tolls and tariffs charged by gas and oil pipeline companies under the Board's jurisdiction.

The Board committees study and keep under review matters that are outside the direct responsibilities of its various panels or that are of internal interest.

Executive Committee

| Members | Responsibilities |
|-------------------|---|
| C.G. Edge | To deal with broad, long-term issues affecting the Board. |
| R.F. Brooks | |
| L.M. Thur | |
| J. Farmer | |
| A.D. Hunt | |
| R. St.G. Stephens | |

Internal Audit Committee

| | |
|-------------------|---------------------------------|
| C.G. Edge | To review the Board's |
| R.F. Brooks | operations and ensure that they |
| L.M. Thur | are administered efficiently, |
| R. St.G. Stephens | economically, and effectively. |

Regulatory Process Committee

| | |
|-----------------|--------------------------------|
| R.F. Brooks | To study and keep under review |
| L.M. Thur | all aspects of the regulatory |
| G. Yorke Slader | process and recommend to the |
| F.H. Lamar | Board measures designed to |
| | improve the efficiency and |
| | effectiveness of regulation. |

Note:

1. The first-named member of each committee is the Committee Chairman.
2. Four committees were disbanded during the year: Energy Studies, Regulation of Pipelines (Tariffs), Regulation of Pipelines (Construction), and Northern Canada Power Commission.

Staff

For the fiscal year 1984-85 the Board's budget is \$25.3 million with a person-year allocation of 458. There were several changes in 1984 in the organization of the Board. The most noteworthy of these changes was the creation of the position of Director General, Pipeline Regulation. The following is a brief description of the offices and branches of the Board. For a listing of the senior staff, please refer to the inside back cover of this report.

The responsibilities of the **Executive Director** include the day-to-day management of the Board, the acquisition and allocation of human and financial resources, and the efficiency and effectiveness of Board activities and operations.

The Director of Plans is responsible for strengthening the effectiveness of staff support, the coordination and administration of policies, and the provision of advice and services in areas of finance and general administration, and security.

The Director General, Energy Studies is responsible for the effective coordination and

synthesis of all matters relating to energy demand, supply, and surplus, in addition to coordinating major energy studies and inquiries respecting energy supply, demand and surplus under Part II of the NEB Act. Responsibilities also include overseeing the integration of information and processing systems and services for the Board.

The Economics Branch advises the Board on economic and socio-economic matters. The Branch also maintains an energy statistics unit.

Among other things the Branch analyses the impact of proposed energy projects on the economy of Canada and its regions. It also considers the socio-economic impact of such projects and assesses the extent to which Canadians will have an opportunity to participate in projects.

The Energy Supply Branch is responsible for advising the Board on matters of oil and gas exploration, drilling, and production, and forecasting trends in oil and gas supply from conventional, oil sands, synthetic, and frontier sources. The Branch independently calculates the reserves and deliverability of gas and the reserves and producibility of oil. The Calgary office of the Energy Supply Branch is engaged in the individual pool calculation of gas and oil reserves.

The Systems Development Branch is responsible for computer systems services, word processing support, and data processing support to the Board, including consultative service on computer operations, data management, and program design and development. It also provides an advisory service on the latest data processing techniques and applications to meet the Board's needs.

The Director General, Pipeline Regulation is responsible for the integration of all staff activities with respect to the regulation of pipelines. This includes the planning and coordinating of all staff work affecting the regulation of oil and gas pipelines and covers the design, construction, operation, safety, and environmental concerns under Part III of the NEB

Act, and matters with respect to traffic, tolls, and tariffs under Part IV of the NEB Act.

The Environment and Right-of-Way Branch is responsible for the protection of the environment and the administration of land acquisitions for pipelines and international power lines. The Branch assesses submissions from concerned landowners regarding the detailed route of those facilities, verifies the accuracy of right-of-way acquisitions, and evaluates the technical requirements related to third-party crossings of pipelines.

The Pipeline Engineering and Operations Branch is principally responsible for pipeline certificates issued under the NEB Act and for the regulation of all pipeline facilities under the Board's jurisdiction with respect to safety matters. The Branch is the principal source of advice to the Board on capital and operating costs, engineering, and pipelines.

The Financial Regulatory Branch has the prime responsibility for rates, tolls, and tariffs, financial advice, the audit of petroleum export charges and costs of transportation under specific areas of the NEB Act and the Energy Administration Act. It also is responsible for auditing the accounts of pipeline companies under the Board's jurisdiction and for monitoring the financial performance of pipelines.

The Electric Power Branch is responsible for electricity export licensing, international power line certification, and regulatory surveillance. The Branch prepares supply and demand forecasts for electricity for use in dealing with electrical or other applications, reviews the United States market for electricity, and provides advice to the Board on matters relating to the production, transportation, sale, and exchange of electricity over which the federal government has jurisdiction.

The Gas Branch is the focal point for all gas and gas product related regulatory activity including the licensing of gas and gas products exports. The Branch also monitors and controls all matters associated with the Board's obligations for the administration of Domestic Gas Pricing

under the Energy Administration Act. In addition, the Branch plays a supportive role in all other regulatory activity with respect to gas and gas products.

The Oil Branch is responsible for providing advice in the general area of oil-related energy matters, including export charges, crude oil and petroleum product export licensing, control of international oil exchanges, allocation of domestic crude oil, questions of oil markets, processing, distribution, and the short-term balance of supply and demand for feedstocks and oil products.

The Law Branch is responsible for providing legal advice to the Board. Counsel represent the Board at public hearings and in the courts.

The Office of the Secretary receives all applications and submissions and coordinates their consideration by the Board. All regulatory instruments (certificates, licences, orders, approvals) are issued by the Secretary or a delegate of the Secretary.

The Office of the Secretary is also responsible for advising the Board on the scheduling of hearings. As well, it makes all administrative arrangements for the conduct of public hearings in Ottawa and across Canada.

The Office also provides media and public relations services, the library information centre, and publications services. It coordinates translation of all material with the Secretary of State.

Public Hearings and Inquiries



Board hearing in progress (Photo: N.E.B.)

Some 18 public hearings were held, totalling 120 hearing days

During 1984 the Board conducted all or part of 18 public hearings and inquiries in locations from Vancouver, British Columbia to Montreal, Quebec, comprising a total of 120 hearing days.

The following summarizes the major decisions rendered in 1984 following public hearings.

Electrical Power Exports

Hydro-Québec (PASNY)

In the fall of 1983 the Board held a public hearing on an application by Hydro-Québec for licences to export electricity to the Power Authority of the State of New York (PASNY) and to Niagara Mohawk Power Corporation (NMPC).

In March 1984 the Board released its Reasons for Decision and issued six electrical licences for exports to PASNY and NMPC. The maximum quantity of electricity that may be exported under all six licences combined is approximately 24 000 gigawatt hours per year.

On 5 April 1984 Newfoundland and Labrador Hydro applied for a review of that part of the Board's decision authorizing exports to PASNY. In its Reasons for Decision released in June 1984, the Board denied the application.

British Columbia Hydro and Power Authority

In March the Board held a public hearing on an application by British Columbia Hydro and Power Authority for three licences to export electricity to the United States for a six-year period, starting 1 October 1984.

In August the Board issued its Reasons for Decision approving three electrical licences.

Among other things, these licences authorized the export of a maximum quantity of 15 000 gigawatt hours per year for six years to the U.S. Northwest and the City of Los Angeles.

Canadian Niagara Power Company, Limited

Canadian Niagara's application was the subject of a public hearing in Ottawa in April.

In May the Board issued its Reasons for Decision approving an export licence for a five-year period from 1 October 1984 to 30 September 1989 to Canadian Niagara Power Company, Limited.

The licence permits Canadian Niagara to export electricity up to a maximum of 500 gigawatt hours in any consecutive twelve-month period throughout the term of the licence.

St. Lawrence Power Company

St. Lawrence's application was the subject of a public hearing in Ottawa in April.

In May the Board issued its Reasons for Decision approving three export licences to St. Lawrence Power Company for a five-year period, from 1 July 1984 to 30 June 1989.

Two of the licences permit St. Lawrence to export power and energy for simultaneous return to Canada. The third licence authorizes the export of 150 gigawatt hours a year of power and energy to New York State.

Hydro-Québec (NEPOOL)

In September, following a public hearing in Montreal in May, the Board issued its Reasons for Decision on an application by Hydro-Québec for a certificate of public convenience and necessity for the construction of a 450 kilovolt, direct-current international power line and for licences to export electricity to the New England Power Pool (NEPOOL) in the United States.

The main elements of the Board's decision were as follows:

- approval of three licences and amendments to existing licences to authorize the export

of power and energy to the New England Power Pool for periods up to 16 years, amounting to approximately 7 000 gigawatt hours per year until 1995 and 4 000 gigawatt hours per year thereafter.

- issuance of a certificate of public convenience and necessity authorizing the construction of the international power line from the Des Cantons substation near Sherbrooke to the Comerford substation near the Vermont-New Hampshire border.

Maritime Electric Company Limited

In 1982 The New Brunswick Electric Power Commission (N.B. Power) was granted three licences to export electricity to Maine Electric Power Company, Maine Public Service Company, Eastern Maine Electric Cooperative, and Central Maine Power Company.

For nine days in July, August, and October of 1984, the Board held a public hearing on an application by Maritime Electric Company Limited (MEC) and a cross-application by N.B. Power. Both applications dealt with the question of the terms, and more particularly the price, at which energy proposed for export to the State of Maine by N.B. Power under the approved licences should be offered to Maritime Electric.

In its application MEC requested that N.B. Power be directed to offer MEC a part of the energy now being exported to the U.S. utilities on terms, including price, as favourable as those enjoyed by the U.S. company (after any appropriate adjustments have been made for differences in the cost of delivery).

The Board will be releasing its Reasons for Decision in early 1985.

Hydro-Québec (Vermont)

In October 1984 the Board held a public hearing in Montreal, Quebec on an application by Hydro-Québec for two licences to export power and energy to the State of Vermont and for a certificate of public convenience and necessity to construct an international power line from the

Bedford Substation in the Eastern Townships to the international border.

The Board expects to release its Reasons for Decision early in 1985.

Manitoba Hydro

In November the Board held a public hearing in Winnipeg, Manitoba on an application by Manitoba Hydro for a licence authorizing the export of electricity to Northern States Power Company, which provides power to the north-central United States.

The Board's Reasons for Decision should be released early in 1985.

Tolls and Tariffs

Trans Québec & Maritimes Pipeline Inc.

Following a public hearing in January and February, the Board released its decision in May on an application by Trans Québec & Maritimes Pipeline Inc. (TQM) for orders to increase, effective 1 January 1984, the tolls charged for the transmission of natural gas on its pipeline, which runs from near Montreal to Quebec City.

The Board awarded an increase.

Interprovincial Pipe Line Limited

Following a public hearing in November 1983, the Board released its decision in March on an application by Interprovincial Pipe Line Limited (IPL) with respect to tolls and tariffs to be charged by IPL for the transportation of crude oil and other liquid hydrocarbons in 1984.

IPL's pipeline comprises the Older System, which runs from Edmonton to Sarnia, and the Montreal Extension, which extends from Sarnia to Montreal. Traditionally tolls have been set separately for the two sections.

In its decision the Board directed the company to determine its tolls for 1984 using an integrated rate structure under which the tolls would be derived from the revenue requirement of the entire integrated system.

The Board issued an order approving new tolls and tariffs effective 1 May 1984.

Westcoast Transmission Company Limited—Method of Toll Regulation

In November and December 1984, the Board held a public hearing to examine the method of regulating Westcoast Transmission Company Limited's tolls and to examine certain additional toll matters. This was the first major review of Westcoast's toll methodology since the hearing held in 1978.

The Board will be releasing its Reasons for Decision in early 1985.

Foothills Pipe Lines (Yukon) Ltd.

The Board held a public hearing in May and June to consider the tariffs and tolls to be charged by Foothills Pipe Lines (Yukon) Ltd. for transmitting natural gas through the so-called prebuilt portions of the Alaska Natural Gas Transportation System.

In October the Board released its Reasons for Decision and toll order dealing with a broad range of financial matters. The chief decisions were to allow the company:

- Recovery of an overrun of \$1.4 million in its 1983 operating and maintenance expenditures.
- A 1984 operating and maintenance budget of \$26 million.
- The inclusion in rate base of construction expenditures incurred in 1982 and 1983 totalling \$339 million.
- A one-time adjustment to rate base of \$25.8 million to allow for the Incentive Rate of Return to which the company was entitled on the basis of its performance in keeping construction costs down.
- Maintenance of a rate of return on common equity of 16.0 percent.

TransCanada PipeLines Limited

Following a public hearing in April and May the Board released its decision in July on an application by TransCanada PipeLines Limited to increase its tolls for the transportation of natural gas in Saskatchewan, Manitoba, Ontario, and Quebec, effective 1 August 1984.

The major decisions were to allow the company:

- An increase of 4.2 percent in tolls for the transportation of natural gas to eastern Canada and an increase in the order of 3.5 to 4.5 percent elsewhere.
- A rate base of \$2.5 billion.
- A rate of return on rate base of 14.5 percent.
- A rate of return on common equity of 15.5 percent and approved a deemed common equity ratio of 30 percent.

Trans Mountain Pipe Line Company Ltd.

Trans Mountain Pipe Line Company Ltd. applied in September for approval of new tolls to be charged for the transmission of oil.

The Board plans to hear the application early in 1985.

Negotiated Natural Gas Export Prices

On 13 July 1984 the Minister of Energy, Mines and Resources announced a change in natural gas export pricing policy effective 1 November 1984 to permit buyers and sellers to negotiate export prices. Under the new policy, such negotiated prices are subject to review by the National Energy Board on the basis of criteria announced by the Minister.

As a result, the Board received several applications either for short-term export orders at negotiated prices or for amendments to the pricing and other terms and conditions of contracts underpinning existing licences.

The Board's practice is to request the comments of interested parties on the applications and hold a hearing where warranted. Of the several

applications for short-term gas export orders, none required a public hearing.

Alberta and Southern Gas Co. Ltd., TransCanada PipeLines Limited, ProGas Limited, Sulpetro Ltd., Westcoast Transmission Company Limited, Pan-Alberta Gas Ltd.

In the fall, the Board held one-day hearings on applications by Alberta and Southern Gas Co. Ltd., TransCanada PipeLines Limited, and Westcoast Transmission Company Limited for approval of renegotiated gas sales contracts. As interested parties did not express any major concerns with the applications filed by Pan-Alberta Gas Ltd., ProGas Limited, and Sulpetro Ltd., they were not set down for hearing.

In November the Board released eight Reasons for Decisions, amending twenty-two gas export licences to specify the new negotiated price contained in amendments to the pertinent gas sales contracts.

Other Hearings

Shell Canada Limited

In October the Board held a public hearing on an application by Shell Canada Limited for orders that would require Air Canada, Nordair Ltd., Quebecair and Pacific Western Airlines to pay Shell Canada for aviation turbine fuel consumed between February 1982 and April 1983.

The Board will release its Reasons for Decision in January 1985.¹

Gulf Canada Limited—Order

In November the Board held a public hearing on an application by Gulf Canada Limited which requested the National Energy Board to direct Trans Mountain Pipe Line Company Ltd. to receive, transport, and deliver, without delay, specified monthly volumes of gasoline and middle distillate from Edmonton, Alberta to Kamloops, British Columbia.

1. The Board released its Reasons for Decision in January 1985.

The Board will release its Reasons for Decision in January 1985.¹

Hearings Adjourned

TransCanada PipeLines Limited—Method of Toll Regulation

In October and November 1984 the Board held a public hearing to examine the method of regulating TransCanada's tolls. This is the first major review of TransCanada's toll methodology since the first hearing in 1971.

On 14 November 1984 the hearing was adjourned to allow TransCanada to file additional information on toll design under alternative pricing assumptions. The hearing is scheduled to resume in February 1985.

Interprovincial Pipe Line Limited—Propane Facilities

The Township of Flamborough, Ontario in June 1983 requested a review of a Board decision to permit Interprovincial Pipe Line Limited to locate propane terminal facilities in the Flamborough area. The matter is reviewed in detail in the section *Legal Matters*.

Canada LNG Corporation—Western LNG Project

In June, Dome Petroleum Limited relinquished its role as manager of the Western LNG Project. Subsequently, the Canada LNG Corporation was established to manage all aspects of the project. The new company includes Dome, Union Oil Company of Canada Ltd., NIC Resources Inc., and Suncor Inc. Resources Group.

Following a request by Canada LNG Corporation in September, the Board approved

- The assignment of Dome's application to construct and operate facilities to manufacture liquefied natural gas for export to Japan.

1. The Board released its Reasons for Decision in January 1985.

- The assignment of Westcoast Transmission Company Limited's application to construct the associated pipeline facilities.
- The assignment of Dome's Licence GL-76, which authorizes the export of LNG to Japan.

This hearing is adjourned pending the receipt of further information in support of the application.

Arctic Pilot Project

In March the Board informed the Arctic Pilot Project sponsors and interested parties that it was examining whether APP's application for the construction of a natural gas pipeline and liquefaction plant on Melville Island in the Arctic should be dismissed, and invited any additional submissions on the matter. Subsequently, APP's agreements with its U.S. buyers expired and the project sponsors stated that they did not intend to extend these agreements. In addition, APP's timetable for the conclusion of agreements with potential European buyers had slipped to an unspecified date sometime in 1985. Therefore, in August 1984, the Board dismissed the application.

Hearings Pending

Murphy Oil Company Ltd.—Certificate

Murphy Oil Company Ltd. applied in December for a certificate of public convenience and necessity for the construction of a 45 kilometre crude oil pipeline from Wrentham, Alberta to Milk River, Alberta.

The Board has scheduled the hearing for February 1985.

Trans Mountain Pipe Line Company Ltd.—Oil Products Facilities

Trans Mountain Pipe Line Company Ltd. filed an application in November for an order to upgrade the company's existing crude oil pipeline system and to construct pipes, tanks, and other facilities.²

2. The hearing has been rescheduled to begin not before 9 April 1985.

TransCanada PipeLines Limited—Certificate

TransCanada PipeLines Limited filed an application in May for a certificate to construct additional facilities required to deliver additional gas exports at Niagara Falls, Ontario. It also proposed that additional exports to the U.S. Midwest be delivered at Monchy, Saskatchewan by Foothills Pipe Lines (Sask.) Ltd.

The Board expects to hear the application in 1985.

Polar Gas Limited—Certificate

Polar Gas Limited filed an application in June for a certificate authorizing construction of a 2 145 kilometre natural gas pipeline from the Mackenzie Delta to Edson, Alberta. The pipeline would transport 21.1 million cubic metres of natural gas per day to markets in the United States.

Inquiries

TransCanada PipeLines Limited—Inquiry into Accident at Liebenthal Purchase Meter Station

In September 1983 an accident occurred on the TransCanada Pipeline system at the Purchase Meter Station at Liebenthal, Saskatchewan. The accident left one employee dead and another injured.

Following a public inquiry in December 1983, the Board determined that the probable cause of the accident was the failure of the employee to follow proper company operating procedures for work on piping under pressure but directed TransCanada to take steps to install a positive warning device on the metering module.

Westcoast Transmission Company Limited—Investigation of Accident at Fort Nelson Gas Plant, British Columbia

In November the Board investigated an accident which occurred in July at the gas plant of Westcoast Transmission Company Limited near Fort Nelson, British Columbia. The accident resulted in the death of one employee.

The Board's report on the causes of the accident and its recommendations to reduce the risk of recurrence will be released in January 1985.¹

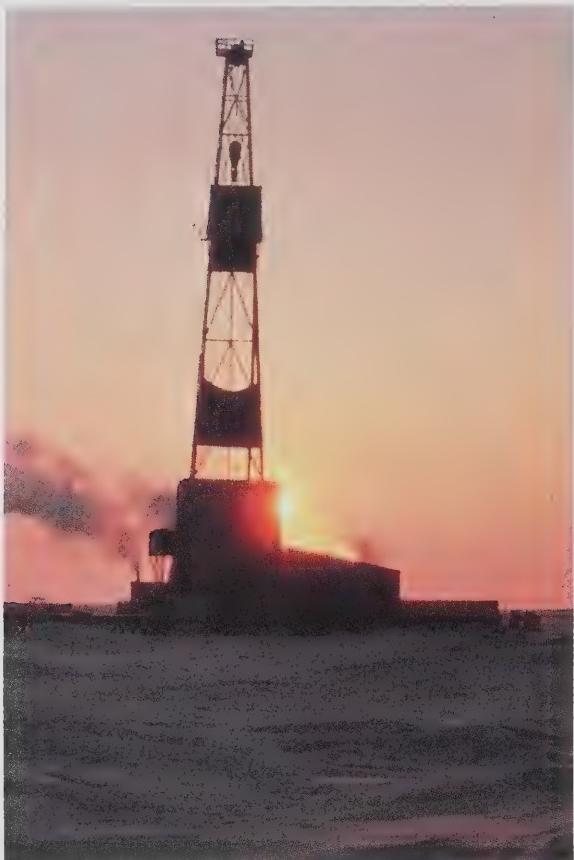
Northern Canada Power Commission—Inquiry

In April the Minister of Energy, Mines and Resources, at the request of the Minister of Indian and Northern Affairs, requested the National Energy Board to inquire into and report on the Northern Canada Power Commission's rate base, revenue requirements, and design of electrical rates for each rate zone in the Territories. This request followed a report issued by the Board in October 1983 following a public hearing in the North.

The five-member Board Panel who will be conducting the inquiry in Yellowknife and Whitehorse early in 1985 will include two temporary members from the Yukon and the Northwest Territories.

1. The Board released its report in January 1985.

Review of the Energy Scene



Drilling rig, MacKenzie Delta (Photo: Gulf)

This year exploratory and development drilling in Canada returned to the record high level established in 1980

Supply and Demand

World oil prices in 1984 continued on a downward trend, reflecting the glut of oil experienced in world markets in the last few years. The average cost of imported crude at Montreal declined about 2.5 percent from the previous year's level. However, the average price paid by Canadians for imported crude at Montreal (in Canadian dollars) increased by 3 percent mainly because of the depreciation of the Canadian dollar. Domestic oil prices continued to be regulated by agreements between the federal and provincial governments, with no major revisions being undertaken during the year. The wellhead price of old conventional light crude remained at \$187.21 per cubic metre, while the petroleum compensation charge was increased by \$17.50 to \$41.14 per cubic metre by the Finance Minister in his November economic statement to Parliament.

The wholesale price of natural gas at the Toronto city gate remained at approximately 65 percent of the price of crude oil at the Toronto refinery gate. A new natural gas export pricing policy came into effect on 1 November 1984. This policy permits negotiated prices between exporters and their customers, subject to established criteria including a floor price set by the Toronto city gate.

After three consecutive years of decline in total consumption of energy, increases were registered in all major fuels in 1984. The consumption of natural gas increased by about 10 percent, led by major increases in demand in the Quebec market as a result of continued expansion of the service area. Growth in the use

of other fuels was more moderate. Domestic demand for refined petroleum products in 1984 grew by some 1 percent—the first increase since 1979. Demand for electricity in 1984 increased by about 7 percent.

Table 1
Canadian Consumption of Primary Energy¹
(Petajoules)

| | 1982 | 1983(p) | 1984(e) |
|----------------------------------|----------------|----------------|----------------|
| Petroleum ² | 3 374.7 | 3 160.2 | 3 187.9 |
| Natural Gas ³ | 1 798.8 | 1 847.7 | 2 039.0 |
| Hydro Electricity ⁴ | 2 494.9 | 2 524.6 | 2 625.9 |
| Nuclear Electricity ⁴ | 418.3 | 502.5 | 549.1 |
| Coal | 895.9 | 926.0 | 1 014.0 |
| Renewable | 470.0 | 503.5 | 519.0 |
| Total for Canada | 9 452.6 | 9 464.5 | 9 934.9 |

(p) preliminary

(e) estimates

1. Includes non-energy use, own use, and conversions.
2. Includes LPGs.
3. Excludes reprocessing shrinkage.
4. Converted using a factor of 10.5 petajoules per terawatt hour. This assumes that the amount of primary energy associated with hydro and nuclear electricity is the amount which would be required if fossil fuels were used.

If the energy were converted using the heat content of electricity output (3.6 petajoules per terawatt hour), the total would be:

| 1982 | 1983(p) | 1984(e) |
|-------|---------|---------|
| 994.3 | 1 033.1 | 1 083.6 |

Total production of domestic crude oil and equivalent averaged 242 371 cubic metres per day in 1984, an increase of 5 percent from the 1983 level. The main contributing factors were increased oil exports and continued development of heavy oil resources. Unlike previous years, production was maintained at close to capacity levels. This reduction in shut-in productive capacity resulted in part from the Board's 1983 decision to issue export licences for heavy crude oil exports on an annual basis and light crude oil exports on a short-term basis.

Exports of crude petroleum totalled 702 petajoules in 1984, an increase of 17 percent over 1983.

Total natural gas production also recorded a substantial increase of about 9 percent in 1984, reversing the previous year's decline. The consumption in Canada increased by 10 percent and exports by 6 percent.

Canada's total net installed electrical capacity increased by 5 percent from the 1983 level to 85 500 megawatts. Export sales of electricity increased by about 2 percent over the previous year.

The total Canadian energy trade balance increased by 5 percent to 1 414 petajoules. Natural gas contributed about half of the net exports. The rest were shared almost equally between petroleum and electricity net exports.

Table 2
Canadian Trade Balance
in Oil, Gas, and Electricity
(Petajoules)

| | 1982 | 1983(p) | 1984(e) |
|---------------------------|----------------|----------------|----------------|
| Exports | | | |
| Petroleum ¹ | 797.9 | 1 051.2 | 1 171.5 |
| Natural Gas | 850.1 | 770.6 | 809.4 |
| Electricity ² | 118.7 | 132.9 | 135.3 |
| Total | 1 766.7 | 1 954.7 | 2 116.2 |
| Imports | | | |
| Petroleum | 717.5 | 613.7 | 701.1 |
| Natural Gas | 0.2 | 0.1 | 0.1 |
| Electricity ² | 1.0 | 0.8 | 1.0 |
| Total | 718.7 | 614.6 | 702.2 |
| Net Export - Total | 1 048.0 | 1 340.1 | 1 414.0 |

(p) preliminary

(e) estimates

1. Includes petroleum products.
Excludes exchanges between Canada and United States.
2. Electricity is converted at 3.6 petajoules per terawatt hour on the basis of the energy content of the electricity output. Excludes exchanges between Canada and United States.

Net export revenues from energy trade amounted to \$8.1 billion, an increase of 9 percent over the previous year (Table 2). Natural gas accounted for \$3.9 billion of this, while petroleum and electricity were \$2.8 billion and \$1.4 billion respectively (Table 3).

Table 3
Canadian Trade Balance¹
in Oil, Gas, and Electricity
(Millions of Dollars)

| | 1982 | 1983 ^(p) | 1984 ^(e) |
|---------------------------|----------------|---------------------|---------------------|
| Exports | | | |
| Petroleum ² | 4 410.7 | 5 876.0 | 7 071.8 |
| Natural Gas | 4 807.6 | 3 940.8 | 3 920.3 |
| Electricity | 1 105.9 | 1 248.6 | 1 376.0 |
| Total | 10 324.2 | 11 065.4 | 12 368.1 |
| Imports | | | |
| Petroleum ² | 4 538.7 | 3 602.1 | 4 242.1 |
| Natural Gas | 1.0 | 0.8 | 0.6 |
| Electricity | 5.4 | 5.7 | 9.6 |
| Total | 4 545.1 | 3 608.6 | 4 252.3 |
| Net Export - Total | 5 779.1 | 7 456.8 | 8 115.8 |

(p) preliminary

(e) estimates

1. Excludes exchanges between Canada and United States.

2. Includes petroleum products.

Exploration and Development

In 1984 exploratory and development drilling in Canada returned to the record high level established in 1980. During the year approximately 9 200 wells were drilled, of which all but the 118 wells drilled in frontier regions were located in the conventional producing areas of the western provinces and Ontario. Of the 9 200 wells drilled in 1984, 2 800 were exploratory wells. Of these, 38 percent were successful oil wells and 24 percent were successful gas wells. A regional breakdown of drilling activity is shown in Table 4.

In the conventional producing areas, the combined effects of a continued weak gas export market, the New Oil Reference Price (NORP) and royalty 'holiday' for discovery wells were reflected in industry's continued emphasis on oil exploration and development.

The exploration and development activity associated with the oil resources discovered in the Beaufort Sea and on the Grand Banks, the gas resources found near Sable Island, and the development of the Norman Wells oil field has maintained drilling activity in the frontier areas at about the same level as in 1983.

The following is a more detailed account of significant drilling activity in 1984. (Locations listed are identified on the accompanying map, Figure 1).

Table 4

**Drilling Activity by Area
(Number of Wells Drilled)**

| | 1983 | 1984 |
|---|-------------|-------------|
| British Columbia | 71 | 183 |
| Alberta | 4800 | 5573 |
| Saskatchewan | 1800 | 2904 |
| Manitoba | 250 | 250 |
| Southern Yukon and Northwest Territories Mainland | 62 | 79 |
| Ontario | 169 | 162 |
| Mackenzie Delta/Beaufort Sea | 5 | 11 |
| Arctic Islands | 5 | 4 |
| East Coast Offshore | | |
| Scotian Shelf | 11 | 13 |
| Grand Banks | 5 | 10 |
| Labrador Shelf | 4 | 1 |
| Total for Canada | 7182 | 9190 |

British Columbia

After two consecutive years of declining drilling activity, 1984 marked a turn-around in British Columbia. Drilling activity was concentrated in the area of the 1983 Desan oil discovery (1), which accounted for more than half the wells drilled in the province. The Fort St. John area (2) also experienced considerable oil drilling activity. Exploration play is under way in the southeastern part of the province (3) in a search for carbon dioxide for use in enhanced oil recovery projects.

Alberta

Increased drilling in northwestern and west central Alberta was concentrated in areas of known oil production (4 to 9), where small to medium sized scattered oil accumulations made significant contributions to Alberta's oil reserves and production levels. There was considerable drilling activity in the heavy oil and bitumen regions of Lloydminster (10) and Cold Lake (11).

Saskatchewan

For a second consecutive year a new drilling record was established in Saskatchewan. Activity was stimulated by several factors such as changes in provincial oil royalties and tax regulations, an increase in natural gas prices, the province's objective of producing more of the natural gas it consumes, plus a strong export demand for heavy oil. As in previous years, drilling was concentrated in the heavy oil belt of west central Saskatchewan (12), and in the southwestern part of the province (13) where shallow gas reserves were developed. The search for light oil also generated considerable drilling activity in southeastern Saskatchewan.

Figure 1
Oil and Gas Developments



Manitoba

Drilling activity in Manitoba continued at approximately the same level as in 1983, with activity concentrated on the development of oil reserves in the southwestern part of the province at Daly, Virden, Pierson, and Waskada (14).

Yukon and Northwest Territories Mainland

Development of the Norman Wells oil field for the purpose of a waterflood program accounted for the drilling of 68 wells during 1984.

Elsewhere on the mainland, 15 wells were drilled; 11 were unsuccessful while the others were suspended and will be tested at a later date.



Conical floating drilling unit in the Beaufort Sea (Photo: Mobil)

Mackenzie Delta - Beaufort Sea

On the Tuk Peninsula drilling was completed at two wells, one of which, Esso et al Tuk M-09 (15), was classified as a gas discovery.

Offshore, in the Beaufort Sea, Gulf Canada Resources Inc. and partners tested oil from the Pitsiulak A-05 (15) well and oil and gas from the Amauligak J-44 (17) well. The third 1984 Beaufort discovery was at Esso's Kadluk 0-07 (16) well, which recovered gas during the testing program.

Arctic Islands

Panarctic Oils Ltd. drilled two exploratory and two delineation wells in 1984. While both exploratory wells were abandoned, one, the Buckingham 0-68 well (18) did recover a small amount of oil. Of the two delineation wells, one was dry while the other, Skate C-59 (19), tested gas from the same formation which recovered hydrocarbons in the discovery well.

East Coast Offshore

On the Scotian Shelf, delineation drilling continued in the Venture field (20) and in the adjacent area. Mobil et al Venture H-22, the fourth delineation well on the structure, helped define the eastern limits of the field.

During the year, three wells were spudded on the West Venture (20) structure, located between the Venture field and the 1982 Olympia gas discovery (20). At year end the W. Venture C-62 well was being drilled, while at the W. Venture N-91 well, the operator was attempting to recover drill pipe which was dropped in the well when abnormal gas pressure problems were experienced.

South of Sable Island, Shell Canada Resources Limited drilled a successful delineation well to evaluate the 1983 Glenelg discovery (21). At year end a second delineation well was being drilled on the structure.

Elsewhere on the Scotian Shelf, gas discoveries were made at Alma (22), Chebucto (23) and Uniacke (24).

On the Grand Banks (25), Mobil Oil Canada, Ltd. and partners drilled and completed two successful oil delineation wells in the Hibernia field. To date there have been ten wells drilled in Hibernia.

Elsewhere on the Grand Banks, gas was tested at the North Dana and Trave wells, oil was recovered at the Terra Nova well and oil and gas were recovered at South Mara.

No drilling was conducted on the Labrador Shelf in 1984; however, one well which previously had been suspended was re-entered and abandoned.

Oil and Gas Reserves

The Board's estimate of remaining established reserves of conventional crude oil as of 31 December 1983 is 719.0 million cubic metres, 16.7 million cubic metres less than the 31 December 1982 estimate.

The Board's estimate of remaining established reserves of marketable natural gas in the conventional producing areas as of 31 December 1983 is 80.0 exajoules, 1.4 exajoules lower than its 31 December 1982 estimate.

Table 5

Estimated Established Reserves of Conventional Crude Oil at 31 December 1983 (Million Cubic Metres)

| | Initial | Remaining |
|-------------------------|---------------|--------------|
| British Columbia | 81.1 | 22.5 |
| Alberta | 1907.7 | 550.5 |
| Saskatchewan | 399.9 | 99.7 |
| Manitoba | 32.5 | 10.1 |
| Northwest Territories | 39.9 | 35.4 |
| Ontario | 10.1 | 0.8 |
| Total for Canada | 2471.2 | 719.0 |

Table 6

Estimated Established Reserves of Marketable Natural Gas at 31 December 1983 (Exajoules)

| | Initial | Remaining |
|---|--------------|-------------|
| British Columbia | 16.0 | 9.6 |
| Alberta | 110.5 | 67.7 |
| Saskatchewan | 2.9 | 1.8 |
| Southern Yukon and Northwest Territories | 0.6 | 0.4 |
| Ontario and Other Eastern Producing Areas | 1.3 | 0.5 |
| Total | 131.3 | 80.0 |
| Mackenzie Delta | 5.6 | 5.6 |
| Arctic Islands | 12.0 | 12.0 |
| Total for Canada | 148.9 | 97.6 |

Review of Board Activities



V Pad, Cold Lake (Photo: Esso Resources)

Production and exports of crude oils and natural gas increased; generation and exports of electricity also increased

Crude Oil and Petroleum Products

International

During 1984, the full impact of the apparently fundamental shift in energy consumption patterns was felt by the world oil industry. This shift was highlighted by a persistent weakness in the demand for oil products, notably in the key areas of North America and Western Europe. Throughout the year widespread discounting from "official" or "contract" prices took place. This, combined with very low margins available to refiners and extreme fragility of the overall crude oil price structure, helped to destabilize markets. Spot market pricing became prevalent and distortions appeared in the scales of price differentials that traditionally reflect differing qualities and competitive refining values of individual grades.

Under these conditions the formerly dominant Organization of Petroleum Exporting Countries (OPEC) lost much of its influence and market share. Although the \$29 per barrel marker level and a measure of cohesion were effectively maintained, there remained divisions among members related to differing interests, poor discipline in regard to production quotas, and much covert price discounting (only about half of OPEC's 1984 sales were at official prices). Some OPEC producers continued to forge ahead in crude oil output and North Sea and Texas grades replaced the Arab Light OPEC "marker" as the industry's price leader.

It became increasingly evident that the weakness in oil demand originated in part from factors which well may persist for decades. Many of the initiatives taken such as building insulation codes, smaller and more fuel-efficient vehicles etc., are not liable to reversal or abandonment even with lower oil prices and accelerated economic growth. Other structural changes affecting the market include a reduction in the number of active refineries and the remainder operating with much lower inventories than before.

Domestic

An allocation of domestic light crude oil, excluding light sour blend (LSB), was required only during the first quarter of 1984. Strong demand for LSB resulted in its allocation during seven of the twelve months of 1984. Despite the relative absence of domestic allocations, light crude oil was shut in only twice in 1984 (April and August), averaging 990 cubic metres per day for the year.

Authorized exports of domestic light crude oil averaged about 14 300 cubic metres per day in 1984, a 64 percent increase over 1983 levels. The continued subsidization of the movement of domestic light crude oil to Atlantic refiners resulted in deliveries to the Atlantic region being 12 percent higher than in 1983 and averaging 8 300 cubic metres per day for the year. Deliveries of domestic crude oil and equivalent hydrocarbons to Canadian refineries will approximate 1983 levels.

Toward the end of 1984, steady production of domestic light crude oil and increased production of western Canadian heavy crude oil combined to produce a potential capacity problem on the Interprovincial Pipe Line Limited (IPL) system. To alleviate this possibility, the Board encouraged the blending of light and heavy crude oil on IPL as well as the movement of domestic crude oil by means other than IPL.

The projected production of western Canadian crude oil will require pumping rates in excess of existing pumping capacities throughout 1985. As a result, the Board approved an IPL application to

construct facilities increasing its capacity in the fourth quarter of 1985.

Canadian demand during the year for the main petroleum products (gasoline, middle distillates, heavy fuel oil) declined by 1.6 percent from 1983 levels, with Quebec and British Columbia leading the downward trend. Demand for heavy fuel oil and motor gasoline fell by 9.2 and 1.8 percent respectively; middle distillate demand increased by 1.2 percent. Refining capacity, lost when Texaco closed its Prairie refinery, was more than offset with the opening of Shell's Scotford plant which has a design capacity of about 7 900 cubic metres a day.

Canadian refinery crude runs were almost 1.0 percent higher in 1984 than the year before although Atlantic and Quebec refineries' throughput declined from an average 77 000 cubic metres per day in 1983 to about 73 000 cubic metres per day in 1984. During 1984 crude runs west of Quebec averaged 159 000 cubic metres per day.

The Board's practice of providing a monthly overview of the oil supply/demand balance in Canada to industry and federal and provincial officials was maintained.

Exports and Exchanges

With continued increase in production and relatively flat demand by Canadian refiners, exports of heavy crudes averaged about 36 000 cubic metres per day for the year, an increase of 12 percent over the previous year. Exports of light crude also increased during 1984, with the final volume expected to average 14 300 cubic metres per day.

The demand by U.S. refiners for Canadian light crude in exchange for U.S. domestic, delivered to Canadian refiners, is expected to reach 930 000 cubic metres, about the same as in 1983. Eastern Canadian exchanges involving the export of Canadian crude oil in return for the receipt of offshore shipments to Eastern Canada increased over last year, totalling approximately 1.8 million cubic metres.

During 1984 the Board encouraged exports of petroleum products in order to help sustain the

production of western Canadian crude oil while also increasing throughput at Canadian refineries and upgrading a domestic resource. As a result, exports of licensed petroleum products in 1984 averaged 18 900 cubic metres per day, about 23 percent higher than those of 1983. Licensed imports of heavy fuel oil averaged about 3 000 cubic metres per day, slightly less than the 1983 level.

Commencing 1 January 1984, export charges replaced the refund of import compensation on exports of petroleum products from eastern Canada. At the same time, a charge was applied on licensed exports of asphalt.

Revenue Sharing

The Board continued to administer the program which provides for the equal sharing of revenue from export charges on crude oil between the federal government and the producing provinces. Since the inception of the program in November 1980, approximately \$987 million in revenues has been distributed among the producing provinces. In 1984 a total of approximately \$233 million was distributed.

Table 7
Crude Oil and Equivalent Hydrocarbons Production, Imports and Exports
(Thousands of Cubic Metres per Day)

| | 1982 | 1983(p) | 1984(e) |
|---------------------|-------|---------|---------|
| Canadian Production | 217.7 | 230.3 | 242.4 |
| Imports | 43.8 | 34.6 | 34.7 |
| Exports | 24.8 | 42.8 | 49.8 |

(p) preliminary

(e) estimates

Natural Gas and Gas Products

Production and sales of natural gas in 1984 increased from the 1983 levels, largely because of the extension of gas distribution systems in Quebec as well as generally improved

economic conditions. Net sales of natural gas in Canada during 1984 increased by 10 percent, and exports to the United States by 6 percent. Production in British Columbia increased by 11 percent, while production in Alberta increased by 8.4 percent from the 1983 production levels.

Natural Gas Production and Consumption

In 1984, Canadian production of marketable natural gas increased by 5.7 billion cubic metres from the 1983 level of 65.4 billion cubic metres, an increase of 8.7 percent. Net sales of natural gas in Canada during 1984 increased by 4.6 billion cubic metres, up 10.5 percent over the 1983 level of 43.8 billion cubic metres.

Consumption in the residential sector grew by 9 percent while the commercial sector improved by 6.5 percent. The industrial sector, which represents approximately 50 percent of total net sales in Canada, increased 12.6 percent reflecting the generally better economic conditions. During 1984, the delivery of natural gas from western Canada was extended further into Quebec by the construction of a distribution lateral into the Lac St. Jean region.

Table 8
Natural Gas Deliveries
(Billion cubic metres at 101.325 kPa and 15° Celsius)

| | 1982 | 1983(p) | 1984(e) |
|-------------------------------------|-------------|-------------|-------------|
| Net Sales in Canada | 43.9 | 43.8 | 48.4 |
| Exports | 22.2 | 20.2 | 21.4 |
| Other Canadian Uses ¹ | 3.4 | 1.4 | 1.3 |
| Total Deliveries² | 69.5 | 65.4 | 71.1 |

(p) preliminary

(e) estimates

1. Includes pipeline fuel and losses and other deliveries, less imports and inventory changes.

2. Marketable pipeline gas.

Natural Gas Exports

The softness in the United States market for Canadian gas continued during 1984. Reduced demand by purchasers coupled with severe price

competition from residual fuel oil and U.S. gas supplies resulted in little change in Canada's export market share. During 1983 gas exports were only 43.0 percent of the total authorized volume; during 1984 this percentage increased slightly to 44.5 percent. Total natural gas exports were 21.4 billion cubic metres, an increase of 6 percent over 1983.

The Volume Related Incentive Pricing (VRIP) program was continued in 1984, enabling Canadian exporters to sell a portion of their gas at an incentive price of \$3.17 (U.S.) per gigajoule and thereby maintain their market share. Some export companies sold gas under the monthly VRIP scheme which allowed them to sell incentive-priced gas to their U.S. customers each month rather than wait for the customer to purchase the base quantity on an annual basis. This program provided exporters with an opportunity to maintain exports at the 1983 level, thereby eliminating further erosion of sales.

On 13 July 1984 the Minister of Energy, Mines and Resources announced that effective 1 November 1984 gas export prices would be set on the basis of buyer/seller negotiations. The new policy requires the Board to ensure that pricing recommendations to the Minister are in accordance with the criteria stated in the Government's Natural Gas Export Pricing Policy statement.

In November and December, on the Board's recommendation, the Minister approved new negotiated export prices for Alberta and Southern Gas Co. Ltd., Canadian-Montana Pipeline Company, Pan-Alberta Gas Ltd., ProGas Limited (for sales to ANR Pipeline Company and Tennessee), Sulpetro Ltd., TransCanada PipeLines Limited (for sales to ANR and Midwestern) and Westcoast Transmission Company Limited.

The Board may issue short-term gas export orders under the Part VI Regulations. During 1984, the Board received 18 applications for short-term orders. Of these, three were approved, three were denied as not being in the public interest, and four were withdrawn. The Board is reviewing the remaining eight applications.

During 1984 Canadian natural gas revenues from exports were \$3.9 billion, essentially unchanged from the revenues of 1983.

Ethane and Ethylene

No licences or orders were issued for the export of ethane or ethylene during 1984. In July the Board issued a short-term order authorizing Dome Petroleum Limited to import 160 000 cubic metres of ethane at Sarnia, Ontario.

Export Control of Propane and Butanes

In 1984 the Board continued to authorize the export of propane and butanes and to set minimum export prices. The minimum export prices for propane ranged from 10.5 to 11.5 cents per litre and those for butanes ranged from 14.5 to 15.5 cents per litre.

Total net Canadian production of propane and butanes was 7.3 million cubic metres and 4.4 million cubic metres, respectively. Canadian domestic requirements for propane and butanes were 4.3 million cubic metres and 2.1 million cubic metres, respectively.

There was no restriction on the quantity of butanes that could be exported. The export limit on propane was set at 36.0 percent of production at the beginning of the 1984-85 allocation year, and increased to 40.0 percent in December 1984, retroactive to 1 April 1984. In 1984, exports of propane were 3.1 million cubic metres, up 6 percent from the previous year, and exports of butanes were 2.5 million cubic metres, up 9.4 percent. The predominant export market for Canadian propane and butanes continued to be the United States.

During the latter part of 1984, the Board consulted with the gas industry on whether the volume restriction on propane exports should be removed.¹ The volume restriction on the export of butanes had been similarly removed in October 1983.

1. In January 1985, the Board decided to remove the volume restriction on propane exports effective 1 April 1985.

Electric Power Activities

Export and Generation of Electricity

Gross exports of electricity in 1984 were 41 842 gigawatt hours, compared to 38 831 gigawatt hours in 1983, and imports were 2 750 gigawatt hours, compared to 3 179 gigawatt hours in 1983. This resulted in net exports of 39 092 gigawatt hours compared to 35 652 gigawatt hours in 1983. These net exports constituted about 9.0 percent of total Canadian generation, no change from 1983.

Export revenues of about \$1 376 million (\$1 249 million in 1983) and import costs of \$10.6 million (\$6.2 million in 1983) resulted in a net revenue of approximately \$1 365 million (\$1 243 million in 1983).

In 1984 the total export sales of electricity increased marginally (2 percent) over the previous year, while the associated revenue was up 10 percent. This increase in revenue results mainly from higher prices of electricity in the U.S. market. Although the Canadian utilities entered into a few new export sale agreements during the year, there was very little activity carried out under these new agreements.

Ontario Hydro entered into an import agreement to replace some nuclear generation lost as a result of the outage of certain nuclear units. This loss of generation along with the increased competition in the Michigan and New York markets contributed to a decline in Ontario Hydro's interruptible export sales.

B.C. utilities increased their export sales by 45 percent over 1983; however, volumes dropped in the last quarter of the year due to the implementation of a new Intertie Access Policy by Bonneville Power Administration in the United States. This policy gives preference to northwestern utilities over Canadian utilities most of the time, regardless of price.

Because of their relation to exports, the Board monitors Canadian power generation and interprovincial transfers although it does not regulate these matters. Figure 2 shows exports and imports in 1984 as well as interprovincial transfers for 12 months ending October 1984.

Total generation of electricity in Canada in 1984 was estimated at 425 000 gigawatt hours, up about 7.4 percent over 1983. Of this, approximately 67 percent was supplied from hydroelectric generation, 21 percent from conventional thermal generation and 12 percent from nuclear generation. Returns submitted to the Board by the major exporting utilities showed that, of their exports, 60 percent of the energy came from hydro generation, 29 percent from imported coal, 5 percent from nuclear, 4 percent from imported oil, and 2 percent from Canadian fossil fuel.

A new certificate of public convenience and necessity and related orders issued during the year are shown in Appendices E-1 and E-2.

Figure 2

International and Interprovincial Transfer of Electricity (Gigawatt Hours)



New licences to export power and energy and related orders issued during the year are tabulated in Appendices E-3 and E-4.

Exports of electric energy under each licence and order during the year are tabulated in Appendix E-5 and the total electricity trade for the period 1980-1984 is shown in Appendix E-6.

Other Activities

As part of their operational activities and advisory role, Board staff continued their liaison and consultation with outside agencies and other government departments on electric power matters. Senior Board staff keep abreast of developments in electricity through participation as the Canadian observers to the North American Electric Reliability Council, a

voluntary organization of electric power utilities who make up virtually all the electric power supply in the contiguous United States and Canada. In addition, staff continued their participation in the Canadian Electrical Association, the Canadian Standards Association and other technical societies.

Pipeline Activities

The Board regulates a total of 40 gas, oil and products pipeline companies. Those pipeline systems are shown on Figures 3 and 4.

The Board must approve applications to construct new facilities before companies under its jurisdiction can charge users for the use of these facilities. To this end, the Board assesses applications to determine if they are in the

Figure 3

Oil and Products Pipeline Companies Regulated by the N.E.B.



public interest. Appendices G-1, G-2, O-1, and O-2 are a list of the orders approving new pipeline facilities issued by the Board in 1984. The Board also monitors the construction of new facilities and the operation of pipelines.

One of the Board's most important functions with respect to the regulation of pipelines is monitoring the construction of new facilities, compressor stations, replacements or upgradings, meter stations, and sales taps. The Board ensures that pipeline operators comply with safety and environmental regulations, Canadian standards, and the Board's own certificate terms and conditions in order to provide the user with a reliable and cost-effective transportation system. After the Board grants leave to open facilities, it continues

to monitor their operations and to investigate pipeline incidents.

Construction began on the Norman Wells Pipeline during 1984 and from January to April, Interprovincial Pipe Line (NW) Limited (IPL (NW)) built over 587 kilometres of line. The Board's inspection staff, who ensured compliance with approved designs for technical, geotechnical and environmental matters, continues to monitor construction and its effects on the environment.

The Board monitored numerous projects involving replacement, relocation and upgrading of portions of existing pipeline systems. In order to return the pipeline to service as quickly as possible, the Board used expedited leave-to-open procedures.



Trans Mountain Pipe Line Company Ltd. was the only company, other than IPL (NW), to build new pipelines in 1984. These pipelines were built to facilitate the delivery of oil to and from processing plants in British Columbia.

During 1984 Interprovincial Pipe Line Limited experienced a steady increase in throughput volumes, particularly of heavy crude oil. To alleviate any possible capacity problems, IPL proposed installing additional facilities in western Canada and switching types of crude oil between its various lines to service Montreal refineries. Both applications submitted for these proposals were approved by the Board.

In June the Board approved a proposal by TransCanada PipeLines Limited to use a new high impact welding process for a pipeline loop project near Thunder Bay, Ontario. This new technology, which consists of joining pipes together with internal and external explosive charges, could result in future reductions in pipeline construction costs in remote areas of Canada.

During the year TransCanada received approval to construct compression facilities at two locations enabling it to deliver increased volumes to markets in Quebec and eastern United States. TransCanada also applied and received approval for the construction of some new facilities as well as the replacement of some existing ones.

During the year, Westcoast Transmission Company Limited also applied for and received Board approval for a number of routine additions and replacements to its pipeline system. In addition, Westcoast received Board approval to upgrade and relocate its pipeline in order to accommodate new highway construction.

Westcoast, Trans Québec & Maritimes Pipeline Inc., Inter-City Gas Corporation and TransCanada were active in the construction of some 20 new meter stations and sales taps in 1984. These stations are used to measure the amount of gas delivered from the transmission companies to local natural gas distributors across Canada.

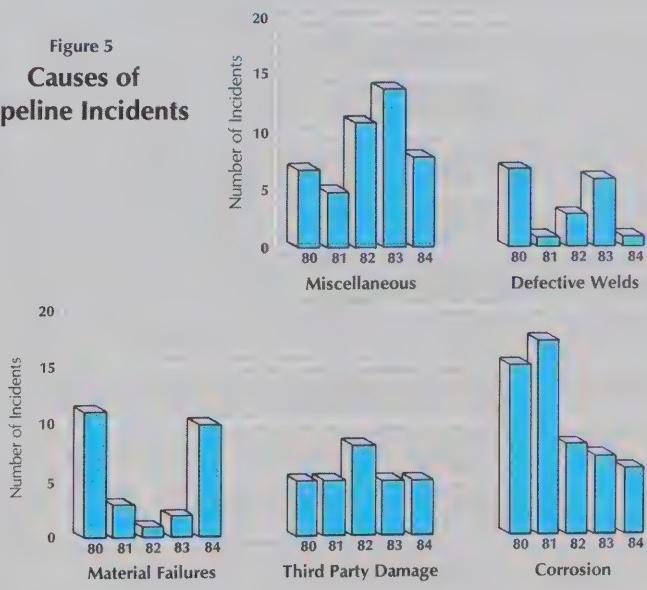
Pipeline Incidents

The Board requires detailed reports on all incidents involving personal injury or fatality and on pipeline malfunctions or any other events which result in a loss of service of a pipeline under its jurisdiction. These reports together with the findings of further investigations are considered when forming improved pipeline safety and operational standards as well as when revising and improving regulatory requirements.

The Board conducted several field inspections at pipeline incident locations to ensure that established emergency, safety and environmental protection procedures had been implemented. Immediate and effective steps must be taken to limit the extent of the damage, to contain any spills of hydrocarbons, to provide protection to the public and property, and to repair the damaged pipeline and return it to service as quickly as possible. The Board continues its surveillance of the site to ensure the effectiveness of a company's rehabilitation program.

Figure 5 illustrates the causes of pipeline incidents in 1984. A total of 31 incidents

Figure 5
Causes of
Pipeline Incidents



occurred in 1984, or approximately one incident for every 1200 kilometres of pipeline under the Board's jurisdiction.

Routine Inspection

Throughout the summer of 1984, the Board continued its inspection of the operational, maintenance, and safety practices of pipeline companies. The findings of this inspection enable the Board to assess on a continuing basis the adherence to the companies' operating manuals and the conditions of operation of each pipeline system.

Utility Crossing and Infringements

All utility construction activities affecting pipelines regulated by the Board require its approval. Proposed activities must meet the safety concerns outlined in various standards ensuring safe construction practice.

In 1984, 707 applications relating to crossings or infringements were approved by the Board.

Environmental Matters

Protection of the environment is a major concern of the Board when considering and reviewing applications, as well as during the construction and operation of facilities.

In the interests of efficiency and cost-effectiveness, various environmental disciplines within the Board were amalgamated during the year. That has provided a continuity of approach from pre-application meetings to post-construction monitoring.

In 1984 the Board carried out environmental inspections during the construction of the Interprovincial Pipe Line Limited Gulf-Clarkson pipeline and the Norman Wells pipeline. The Board also reviewed a number of environmental monitoring reports submitted during the year. The purpose of those reports is to monitor the recovery of disturbed right-of-ways following construction.

The Board also carried out a number of operational activities, including investigations

into several landowner complaints and monitoring the restoration of oil spill sites.

In addition to conducting environmental reviews and inspecting projects, the Board maintains an active interest in current Canadian environmental topics. Among the special studies initiated in 1984 were a Review of Pipeline Impacts on Agricultural Lands, the Current Federal Positions on Acid Rain - Canada and the United States, and guidelines for environmental information required with respect to applications for gas plants and other facilities.

With the aim of streamlining the regulatory review of major applications, pre-application and pre-construction meetings were held with companies to discuss their proposals. A number of information sessions were held to guide federal, provincial, and private agencies on how to participate effectively in the Board's regulatory process. Environmental staff attended several international environmental conferences to review and improve the Board's assessment and regulatory procedures.

Energy Studies

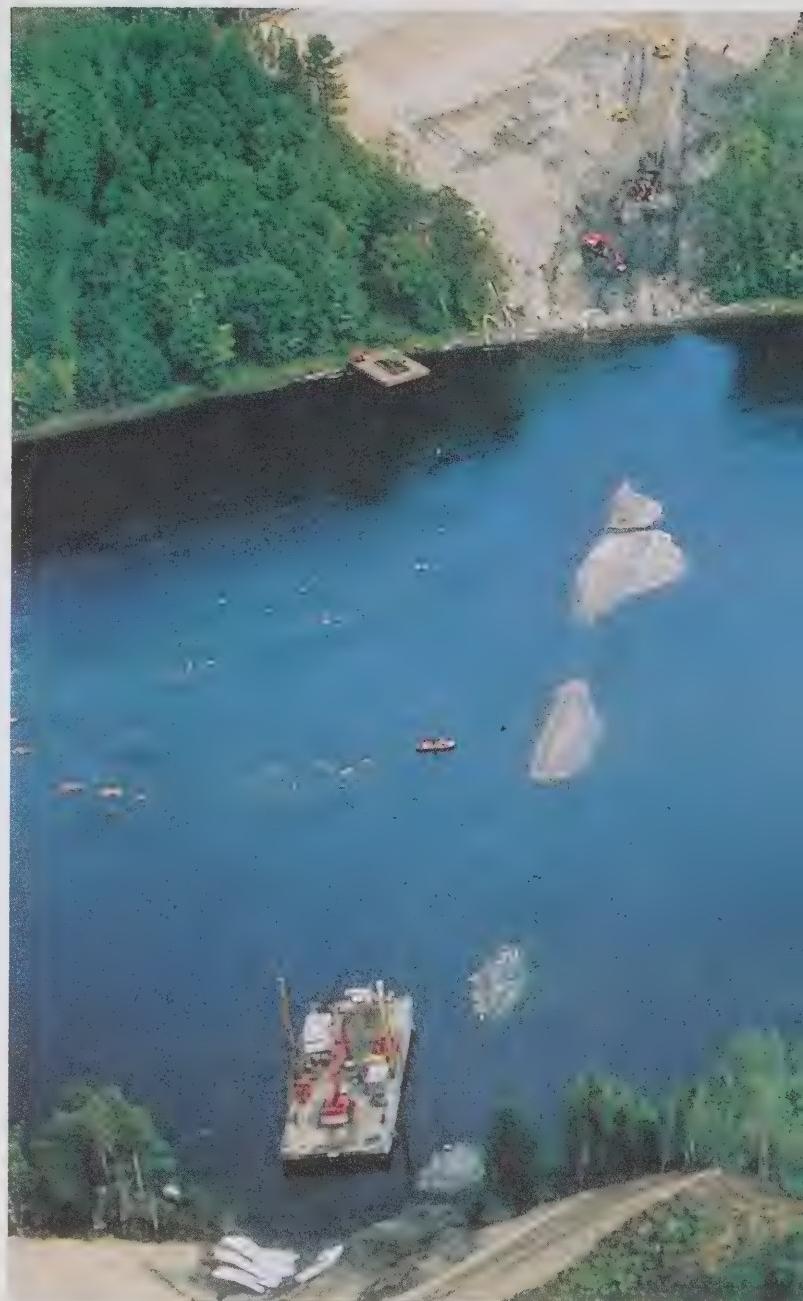
A major study of the prospects for energy supply and demand to the year 2005 was carried out by Board staff during the year. *Canadian Energy: Supply and Demand, 1983-2005*, released in September 1984, updates an earlier study published by the Board in mid-1981. The study was undertaken because of substantial changes which have recently occurred in energy markets. Staff were assisted by some 65 submissions from industry, provincial governments, major energy consumers, and public interest groups. The exchange of views between Board staff and participants on an informal basis significantly aided the preparation of the report.

The major findings of the study are:

- Energy consumption is projected to grow at 1.6 percent a year for the period to 2005, a significant decline from the annual growth rate of 5 percent experienced in the 1950's and 1970's. The lower rate of increase is

expected to result from a more efficient use of energy and from lower economic growth compared with the levels experienced during much of the past two decades.

- When light and heavy crude oil are considered together, Canada currently produces more crude oil than it consumes. It is likely that this situation will continue into the future, although significant production from new oil sands plants and frontier areas will be required. Taken individually, heavy crude oil will be in excess supply throughout the forecast period while domestic production of light crude oil will be less than Canadian demand, implying a continuing need for imports of light crude.
- Natural gas supply from Western Canada is sufficient to meet domestic and authorized export demand until about 2005. Thereafter, alternative supply sources, such as frontier areas or the very low permeability reservoirs in Western Canada, will be required. The current excess deliverability is likely to diminish in the 1980's with the anticipated expansion of United States markets and domestic demand.
- Expansion of electricity generating capacity beyond that committed will not be required for some time to come. In some provinces, considerable excess capacity is available that could support increasing exports to the United States.
- Natural gas liquids will continue to be available to meet Canadian needs, with substantial excess volumes remaining for export. Coal production will increase to satisfy a growing requirement for electricity generation in Alberta and Saskatchewan, and for the export market. The use of alternative energy forms, including wood, wood wastes, and solar power will increase significantly, in absolute terms, over the projection period but their share of total energy use will remain relatively small, less than 8 percent.



River crossing, TQM pipeline (Photo: TCPL)

Financial Regulatory Matters

The Board has 40 oil and gas pipeline companies under its jurisdiction. The five large oil and the five large gas pipeline companies have assets of over \$5 billion and annual revenue requirements of about \$4.9 billion. In support of its regulatory activities, the Board monitors the financial results and accounting practices of these companies and others under its jurisdiction. This is accomplished through the analysis of periodic or special reports required by the Board and by ongoing audits.

To enhance the effectiveness of the audit function, the Board has decided to implement a program of focussed economy and efficiency audits. It has also decided to make future audit reports on pipeline companies available to the public.

The Board is responsible for auditing the export of licenced crude oil and oil products. Charges collected on these exports amounted to approximately \$597 million in revenues in 1984. Under the Transportation Fuel Compensation Recovery Program the Board was delegated responsibility for the collection of export charges applied to aviation and marine fuels consumed in international transportation. Although the application of the program to aviation fuel was cancelled in February 1982 and its application to marine fuel terminated in May 1983, the Board has continued, on behalf of the Federal Government, to handle the processing of refunds to air carriers and the verification of levies on marine fuel under the program.

Legal Matters

Trans Québec & Maritimes Pipeline Inc.

The following litigation involving Trans Québec & Maritimes Pipeline Inc. (TQM) and the Board took place during 1984:

1. TQM applied to the Federal Court of Appeal for leave to appeal the June 1983 Decision of the Board regarding TQM's tolls and the Board's dismissal in August 1983 of TQM's

application for a review of that decision. The Court dismissed the application in August 1984.

2. TQM submitted an interlocutory application with the Court of Appeal in the above proceeding for an order requiring the Board to produce all internal memoranda and staff papers in connection with the tolls decision and the review application. The interlocutory application was dismissed on 19 April 1984.
3. The Board has filed a motion with the Court to quash an application by TQM for a judicial review of the Board's 29 August 1983 refusal to review the May 1983 Decision, on the basis that the grounds for this application are the same as those considered by the Court in the application for leave to appeal that has been dismissed. This motion will be heard early in 1985.¹
4. In May TQM applied to the Federal Court of Appeal for a judicial review of the Board's decision (dated March 1984) in respect of the new tolls effective 1 May 1984.²
5. In June TQM applied to the Federal Court of Appeal for leave to appeal the same March 1984 Decision. This application will be heard by the Court on 24 January 1985.^{1,2}
6. The Canadian Petroleum Association and the Independent Petroleum Association of Canada applied to the Federal Court of Appeal for leave to appeal a decision of the Board dated August 1984 granting in part TQM's application for a review of the March 1984 Decision in regard to TQM's tolls. The application was dismissed on 6 December 1984. An application to review the Board's decision pursuant to section 28 of the Federal Court Act has been filed as well.^{2,3}

1. Adjourned at the request of TQM.

2. The Board understands that TQM will not be proceeding with the litigation described in 4,5, and 6.

3. CPA/IPAC has indicated that this application will be discontinued.

Interprovincial Pipe Line Ltd.

An application to the Supreme Court of Canada for leave to appeal a decision of the Federal Court of Appeal was dismissed on 17 December 1984. The Federal Court had earlier dismissed an appeal brought by the Township of Flamborough under section 18 of the NEB Act, of certain preliminary rulings made by the Board in a public hearing held to review the Board's decision to permit Interprovincial Pipe Line Limited to locate its proposed propane truck and rail loading facilities in the Flamborough area as approved by the Board in Order No. XO-1-83. The grounds for the Township's appeal involved the jurisdiction of the Board to issue the Order in question, the constitutional jurisdiction of the Board over the pipeline as modified, and alleged bias on the part of one Member of the Board.

Hydro-Québec

An application to the Federal Court of Appeal was brought by Newfoundland and Labrador Hydro (NLH) and Churchill Falls (Labrador) Corporation Limited (CFLC) under section 18 of the NEB Act for leave to appeal the January 1984 Decision of the Board granting electricity export licences to Hydro-Québec. On 5 June 1984, the Court granted leave on one of the six grounds for the appeal; NLH and CFLC subsequently decided not to proceed with the appeal.

Canadian Pacific Airlines Limited and Wardair Canada (1977) Ltd.

Actions brought by Canadian Pacific Airlines Limited and Wardair Canada (1977) Ltd. in the Federal Court, Trial Division, against the Attorney General of Canada and the Board remained essentially dormant. The airlines are seeking declarations as to the validity under the NEB Act of export licensing of, and the prescription of minimum export prices for, jet fuel consumed by those airlines on international flights from May 1981 to April 1983.

Unlicenced Exports and Collection of Export Charges

During 1984 the Board assisted the Department of Justice and the Royal Canadian Mounted Police in one successful prosecution for the export of oil without a licence under the NEB Act.

As part of its duty under the Energy Administration Act to administer the collection of charges on oil exported from Canada, the Board assists the Department of Justice in legal actions to collect unpaid export charges. During 1984 two such actions were settled, judgment obtained in a third, and a fourth is proceeding.

Legislation and Regulations



Oil refinery, Dartmouth N. S. (Photo: N.F.B. Phototèque)

The most extensive amendments were to the NEB Part VI Regulations which relate to the export and import of oil, gas, and electricity

Following is an outline of changes that were made during 1984 to the Acts, Regulations, or Rules under which the Board operates. Each issue of the Board's quarterly Regulatory Agenda contains more detailed information on this subject.

Amendments to the National Energy Board Act Regulations

National Energy Board Part VI Regulations

These regulations, which relate to the export and import of oil, gas, and electricity, were amended several times during the year. A new Office Consolidation of the NEB Part VI Regulations, dated February 1984, is available from the Board free of charge. Amendments, completed or in various stages of preparation, include the following:

- (a) Amendments to section 6 concerning the information required in an application for a licence to export electricity. Comments by interested parties have been received and are under review.
- (b) Amendments to sub-section 18(1)(c) to permit holders of electrical orders authorizing exports of 1 000 kilowatts or less to file export reports less frequently than monthly but at least annually. Subject to approval by Governor in Council.
- (c) Amendment to sub-section 19(2)(b) to eliminate the requirement that exports of propane and butanes involving subsequent or previous imports may be authorized by order only if made by pipeline. Approved by Governor in Council in November.

(d) Amendment to section 25 to clarify the definition of the oil products that are subject to licensing by the Board. Subject to approval by Governor in Council.

Gas Export Prices Regulations

In April 1983 the Governor in Council made the Gas Export Prices Regulations to prescribe the price of natural gas exported under the authority of the Part VI Regulations.

Amendments to these Regulations were made in November and December to establish the prices of gas exports negotiated by individual companies. These important changes were made possible by the new policy which allowed exporters of Canadian natural gas to negotiate competitive price contracts with their customers effective 1 November 1984.

In addition, throughout the year there were amendments to the provisions of the Regulations containing the Volume-Related Incentive Pricing Program, including the extension of the program to 31 October 1985. Under this scheme, introduced in July 1983, exporters were able to sell quantities of natural gas in excess of an established base level at an incentive price. Base volumes of gas exports continued to be sold at the uniform border price.

Amendments to the Energy Administration Act Regulations

The National Energy Board is responsible for administering the provisions of Parts I, I.1, and III of the Energy Administration Act. The following regulations were amended:

EAA Natural Gas Prices Regulations, 1981

These regulations were amended a number of times during 1984 to prescribe the prices at which companies purchase Alberta gas outside Alberta for consumption in the domestic or export market.

EAA Part I Regulations

Amendments were made to revise the administrative arrangements for the sharing of the revenues from oil export charges among the provinces. Governor in Council approval of these amendments is anticipated early in 1985.

Submission to Federal Energy Regulatory Commission

In June the Board made a submission to the Federal Energy Regulatory Commission (FERC) of the United States, expressing concern about the possible effects on Canada of FERC Order 380. That order was designed to exclude from contractual take-or-pay payments between U.S. pipelines and their customers all but incurred fixed costs, thereby eliminating all gas costs.

Among other things, the Board argued that the Alaska Natural Gas Transportation System (ANGTS) "prebuilt" be given special consideration under the order particularly as it relates to recovery of costs.

In July the FERC, in recognition of the unique situation of the ANGTS prebuilt system, decided to exempt gas exported via the prebuilt from Order 380. In addition, in the same decision, the FERC also stayed until 1 November 1984 the effect of the order as it related to take-or-pay matters.

Regulatory Reform

During 1984 the Board continued a number of initiatives in the area of regulatory reform. The most important of these follow.

1. In an effort to standardize and simplify its procedures, the Board will shortly replace its existing Rules of Practice and Procedure. The new version will reflect the final comments of interested parties on a second draft issued in September.

- The Rules explain in general how to make an application to the Board. They also specify the procedures to be followed in connection with a public hearing and include a description of the form and content of the documents to be filed with the Board, the procedure for bringing notices of motion before the Board and for applying for a review or re-hearing.
2. The Board has reviewed its information requirements for applications for pipeline and power line facilities under sections 44 and 49 of the NEB Act and has decided to make certain changes.
- The Board has dispensed with the guidelines set out in the Memorandum of Guidance issued 12 December 1963, which related to the concept of Class A, B, and C types of pipeline construction. The only distinction between the types of applications is now based on the criteria set out in sections 44 and 49 of the Act.
- With respect to pipeline applications pursuant to section 44 of the Act, the Board has amended the existing Parts I and II of the Schedule to the Rules of Practice and Procedure for gas and oil pipelines, respectively, to reflect current application practices.
- With respect to pipeline applications pursuant to section 49 of the Act, the Board has prepared two new Parts for gas and oil pipelines which identify the information required to be filed by an applicant.
- Another new Part was prepared to reflect right-of-way information required to be filed by an applicant pursuant to both sections 44 and 49 of the Act with respect to the acquisition of land rights.
- Comments by interested parties on a second draft of these Parts were reviewed at a meeting of Board staff and representatives from industry in August 1984. The final draft of the five Parts was sent to pipeline companies under the Board's jurisdiction in October. The Board has now approved the Parts in principle. They must now be approved by the Department of Justice and published in the Canada Gazette before they become binding.
3. The Board is reviewing the toll adjustment procedures for the large oil pipelines, namely Cochin Pipe Lines Ltd., Interprovincial Pipe Line Limited, Trans Mountain Pipe Line Company Ltd., and Trans-Northern Pipe Line Company. In October, the Board indicated that it is inclined to retain the existing toll adjustment procedure but sought further comments from parties on the consequences of throughput forecasts. The Board expects to finalize these procedures early in 1985.
4. In October 1983 the Board asked pipeline companies under its jurisdiction and other interested parties for comments on draft Capital Construction Cost and Toll Reporting Regulations. These regulations, which specify the information to be furnished by companies that construct and operate a pipeline, would replace the existing Toll Information Regulations, as well as the Board's Memorandum of Guidance of 21 October 1966. Comments received are under review.
- These reporting procedures will be implemented after finalization of the toll adjustment procedures for the large oil pipelines.
5. The Board completed a review of the Oil Pipeline Regulations and the Gas Pipeline Regulations with a view to updating and consolidating the two regulations, which resulted in the issue for comments in late 1984 of a final draft of the new Onshore Pipeline Regulations.

6. The Board recognized the requirement for new design, construction, and operation regulations for offshore pipelines, although it has not yet had an application for approval of an offshore pipeline. A first draft of the new Offshore Pipeline Regulations was prepared and was issued for comment in early January 1985.
 7. In January the Board issued its requirement for plans, profiles, and books of reference for power lines under its jurisdiction. This action arises from section 41 of the NEB Act which extends to companies proposing to construct international power lines the requirement for the filing of plans, profiles, and books of reference.
 8. In October the Board asked companies under its jurisdiction for comments on draft guidelines outlining the environmental information required with applications for gas plants and similar facilities. These interim guidelines are intended to aid companies and consultants in the preparation of applications for projects such as Venture.
 9. In June the Board asked interested parties for comments on draft Special Charge Accounting Regulations, which concern the accounting for the special charge in the tariff for the prebuilt facilities of the Alaska Natural Gas Transportation System.
 10. The Board conducted a review to determine the level of detail at which it should regulate small pipelines. The review identified a number of areas in which regulation could be simplified without jeopardizing the public interest. A draft memorandum describing the new approaches was prepared to be issued for comment in January 1985.
 11. By letter dated 6 November 1984 the Board solicited the views of the producing and marketing sectors of the LPG industry and other interested parties as to whether propane should be decontrolled in the same manner as butanes in October 1983. The survey was initiated following strong indications from the industry that it was time to review the necessity for continued controls on the export of propane.¹
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1. In January, the Board decided to decontrol propane effective 1 April 1985 in the same manner as butanes in October 1983.



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Electricity

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Gas

1. Orders Issued During 1984 Approving New Gas Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

| Applicant | Order No. | Issued | Facilities | Estimated Cost (\$) |
|---|-----------|----------|---|---------------------|
| Many Islands Pipe Line (Canada) Limited | XG-16-84 | 84-09-12 | Gas supply tie in Cold Lake/Beacon Hill, Saskatchewan | 12 300 |
| TransCanada PipeLines Limited | XG-1-84 | 84-01-11 | Metcalfe Sales Tap, Ontario | 78 000 |
| TransCanada PipeLines Limited | XG-2-84 | 84-01-25 | Compressor Station No. 148, St. Lazare, Quebec | 10 010 000 |
| TransCanada PipeLines Limited | XG-3-84 | 84-02-17 | Compressor Station No. 211, Ontario | 3 380 000 |
| TransCanada PipeLines Limited | XG-4-84 | 84-03-14 | Replacement of 9.5 kilometres of 762 millimetres diameter pipeline, Manitoba | 7 065 000 |
| TransCanada PipeLines Limited | XG-6-84 | 84-03-21 | Rebuilding of Oshawa Sales Meter Station, Ontario | 795 000 |
| TransCanada PipeLines Limited | XG-7-84 | 84-06-06 | Construction of 6.2 kilometres of 1067 millimetres diameter pipeline, Ontario | 10 463 000 |
| TransCanada PipeLines Limited | XG-9-84 | 84-05-23 | Powassan Sales Tap, Ontario | 78 000 |
| TransCanada PipeLines Limited | XG-10-84 | 84-05-23 | Trout Creek Sales Tap, Ontario | 78 000 |
| TransCanada PipeLines Limited | XG-11-84 | 84-05-23 | Edgar Sales Tap, Ontario | 62 000 |
| TransCanada PipeLines Limited | XG-12-84 | 84-05-23 | Callander Sales Tap, Ontario | 81 000 |
| TransCanada PipeLines Limited | XG-13-84 | 84-05-23 | Fauquier Sales Tap, Ontario | 95 000 |
| TransCanada PipeLines Limited | XG-15-84 | 84-08-29 | Williamsburg Sales Tap, Ontario | 85 000 |
| TransCanada PipeLines Limited | XG-21-84 | 84-11-07 | Richmound Meter Station, Saskatchewan | 235 000 |
| Trans Quebec & Maritimes Pipelines Inc. | XG-5-84 | 84-03-21 | Portneuf Meter Station, Quebec | 448 000 |
| Trans Quebec & Maritimes Pipelines Inc. | XG-8-84 | 84-05-09 | Donnacona Sales Tap, Quebec | 160 000 |
| Trans Quebec & Maritimes Pipelines Inc. | XG-14-84 | 84-07-18 | Sainte-Anne-des-Pleines Sales Tap, Quebec | 23 000 |
| Trans Quebec & Maritimes Pipelines Inc. | XG-20-84 | 84-09-19 | Mascouche Sales Tap, Quebec | 87 500 |
| Westcoast Transmission Company Limited | XG-17-84 | 84-09-19 | Salmon Valley Meter Station No. 62, British Columbia | 71 000 |
| Westcoast Transmission Company Limited | XG-18-84 | 84-09-19 | Pas Lumber, Bear Lake Meter Station No. 63, British Columbia | 70 000 |

Gas

1. (cont'd) Orders Issued During 1984 Approving New Gas Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

| Applicant | Order No. | Issued | Facilities | Estimated Cost (\$) |
|--|-----------|----------|--|---------------------|
| Westcoast Transmission Company Limited | XG-19-84 | 84-09-19 | 108 Mile House Meter Station No. 64, British Columbia | 73 000 |
| Westcoast Transmission Company Limited | XG-22-84 | 84-10-11 | Summit Lake — Inland Meter Station No. 65, British Columbia | 102 000 |
| Westcoast Transmission Company Limited | XG-23-84 | 84-11-14 | South Taylor No. 2 Meter Station, Meter Station No. 67, British Columbia | 91 000 |
| Westcoast Transmission Company Limited | XG-24-84 | 84-12-19 | Powder King Meter Station No. 65, British Columbia | 100 000 |

Gas

2. Orders Issued During 1984 Approving Modifications and Additions to Existing Gas Pipeline Facilities

| Applicant | Order No. | Issued | Facilities | Estimated Cost (\$) |
|---------------------------------------|-----------|----------|---|---------------------|
| Alberta Natural Gas Company Ltd | XGM-4-84 | 84-02-15 | Station modifications and additions, mobile equipment, etc. | 1 477 970 |
| Alberta Natural Gas Company Ltd | XGM-13-84 | 84-05-23 | Aerodynamic Assembly— Station 2A, Alberta | 106 700 |
| Foothills Pipe Lines (Alta.) Ltd. | XGM-7-84 | 84-03-14 | Compressor station projects, corrosion protection, shut-off devices | 680 000 |
| Foothills Pipe Lines (Sask.) Ltd. | XGM-7-84 | 84-03-14 | Compressor station projects, corrosion protection, shut-off devices, work equipment | 1 480 300 |
| Foothills Pipe Lines (Yukon) Ltd. | XGM-7-84 | 84-03-14 | Transportation equipment | 15 000 |
| | XGM-7-84 | 84-03-14 | Foothills' contingencies | 175 000 |
| Foothills Pipe Lines (Alta.) Ltd. | XGM-8-84 | 84-03-14 | Corrosion protection, measuring and regulating equipment | 31 700 |
| Foothills Pipe Lines (South B.C.) Ltd | XGM-8-84 | 84-03-14 | Measuring and regulating equipment | 82 700 |
| Foothills Pipe Lines (Sask.) Ltd. | XGM-8-84 | 84-03-14 | Compressor station project | 43 400 |
| Foothills Pipe Lines (Yukon) Ltd. | XGM-8-84 | 84-03-14 | Leasehold improvements, transportation equipment | 1 211 800 |
| Foothills Pipe Lines (Sask.) Ltd. | XGM-8-84 | 84-03-14 | Recycle line at Station 394 | 71 200 |

Gas

2. (cont'd) Orders Issued During 1984 Approving Modifications and Additions to Existing Gas Pipeline Facilities

| Applicant | Order No. | Issued | Facilities | Estimated Cost (\$) |
|--|-----------|----------|---|---------------------|
| ICG Transmission Holdings Ltd. | XGM-16-84 | 84-06-13 | Property purchase, pipe lowerings, meter station replacements, etc. | 144 660 |
| Minell Pipeline Ltd. | XGM-12-84 | 84-05-23 | Contingencies | 5 000 |
| TransCanada PipeLines Limited | XGM-1-84 | 84-01-18 | Pipe replacement, cathodic protection, station modifications, etc. | 31 365 800 |
| TransCanada PipeLines Limited | XGM-3-84 | 84-03-07 | Pipe protection | 881 078 |
| TransCanada PipeLines Limited | XGM-5-84 | 84-03-07 | Pipe replacement, station modifications, buildings, etc. | 334 810 |
| TransCanada PipeLines Limited | XGM-9-84 | 84-03-21 | Pipe replacement, compressor valve replacements | 855 000 |
| TransCanada PipeLines Limited | XGM-10-84 | 84-04-11 | General plant, vehicle and office equipment | 6 833 200 |
| TransCanada PipeLines Limited | XGM-18-84 | 84-06-20 | Pipe replacement | not identified |
| Trans Québec & Maritimes Pipeline Inc. | XGM-6-84 | 84-02-29 | Right-of-way and station improvements, etc. | 798 783 |
| Trans Québec & Maritimes Pipeline Inc. | XGM-14-84 | 84-05-30 | Corrosion protection, buildings, warehouses, etc. | 446 313 |
| Trans Québec & Maritimes Pipeline Inc. | XGM-19-84 | 84-06-27 | Meter station modifications | 93 740 |
| Westcoast Transmission Company Limited | XGM-2-84 | 84-02-15 | McMahon plant, Inlet liquid handling addition and gas valve replacement | 5 205 000 |
| Westcoast Transmission Company Limited | XGM-11-84 | 84-04-25 | Pipe replacement, valve operators, corrosion protection, station and plant modifications, warehouses, mobile and office equipment, etc. | 19 569 000 |
| Westcoast Transmission Company Limited | XGM-15-84 | 84-05-30 | Fort Nelson Plant, effluent plant upgrade | 550 000 |
| Westcoast Transmission Company Limited | XGM-17-84 | 84-06-20 | Station and plant modifications, warehouses, office services | 4 024 000 |
| Westcoast Transmission Company Limited | XGM-20-84 | 84-10-04 | Pipe replacement, slope and bank stabilization, retube condensor, silencer installation, mobile equipment housing, etc. | 1 921 000 |

Gas

3. Licences and Long Term Orders to Export Natural Gas as at 31 December 1984

| Exporter | Licence or Order Number | Point of Export | Term of Licence or Order | | Maximum Export Volumes | | |
|---------------------------------------|-------------------------|--|--------------------------|----------|---|--|--|
| | | | From | To | Daily (10 ³ m ³) | Annual (10 ⁶ m ³) | Term (10 ⁶ m ³) |
| 1. Alberta & Southern Gas Co. Ltd. | GL-3 | Kingsgate, B.C. | 61-10-31 | 86-10-30 | 12 995.4 | 4 341.8 | 109 467.8 |
| | | | 86-10-31 | 87-10-31 | 3 248.9 | 1 085.5 | |
| | GL-16 | | 66-11-01 | 67-10-31 | 3 204.6 | 1 059.9 | 45 721.1 |
| | | | 67-11-01 | 89-10-31 | 6 409.2 | 2 119.8 | |
| | GL-24 | | 68-11-01 | 69-10-31 | 3 427.7 | 1 102.0 | 52 491.0 |
| | | | 69-11-01 | 91-10-31 | 6 685.4 | 2 206.7 | |
| | | | 91-11-01 | 92-10-31 | 4 784.6 | 1 577.4 | |
| | | | 92-11-01 | 93-10-31 | 3 835.6 | 1 263.4 | |
| | GL-35 | | 70-11-01 | 87-10-31 | 5 807.2 | 1 912.1 | 32 506.2 |
| | GL-67 | | 86-11-01 | 87-10-31 | 12 995.4 | 3 256.3 | 20 619.1 |
| | | | 87-11-01 | 90-10-31 | 12 995.4 | 4 341.8 | |
| | | | 90-11-01 | 91-10-31 | 8 654.9 | 2 891.6 | |
| | | | 91-11-01 | 92-10-31 | 4 327.5 | 1 445.8 | |
| | GL-68 | | 89-11-01 | 90-10-31 | 6 409.2 | 2 119.8 | 4 237.5 |
| | | | 90-11-01 | 91-10-31 | 4 268.5 | 1 411.8 | |
| | | | 91-11-01 | 92-10-31 | 2 134.3 | 705.9 | |
| | GL-69 | | 87-11-01 | 90-10-31 | 5 807.2 | 1 912.1 | 7 646.4 |
| | | | 90-11-01 | 91-10-31 | 3 867.6 | 1 273.4 | |
| | | | 91-11-01 | 92-10-31 | 1 933.8 | 636.7 | |
| 2. Canadian-Montana Pipe Line Company | GL-5 | Cardston, Alta., Emerson, Man. & Niagara Falls, Ont. | 61-10-31 | 86-10-30 | 1 019.8 | 310.2 | 7 832.3 |
| | | | 86-10-31 | 87-10-31 | 255.0 | 77.6 | |
| | GL-17 | | 66-11-01 | 67-10-31 | 339.9 | 103.4 | 4 652.8 |
| | | | 67-11-01 | 89-10-31 | 679.9 | 206.8 | |
| | GL-25 | | 68-11-01 | 69-10-31 | 339.9 | 103.4 | 4 905.4 |
| | | | 69-11-01 | 91-10-31 | 679.9 | 206.8 | |
| | | | 91-11-01 | 92-10-31 | 439.0 | 133.6 | |
| | | | 92-11-01 | 93-10-31 | 390.9 | 119.0 | |
| | GL-36 | | 70-11-01 | 85-10-31 | 339.9 | 103.4 | 1 628.5 |
| | | | 85-11-01 | 86-10-31 | 170.0 | 51.7 | |
| | | | 86-11-01 | 87-10-31 | 85.0 | 25.9 | |
| | GL-52 | Aden, Alta. | 80-01-01 | 83-03-31 | 1 416.4 | 283.3 | 2 266.4 |
| | | | 83-04-01 | 87-12-31 | 1 133.1 | 283.3 | |
| | GL-53 | Cardston, Alta., Emerson, Man. & Niagara Falls, Ont. | 86-07-01 | 86-10-31 | 340.0 | 34.5 | 86.2 |
| | | | 86-11-01 | 87-10-31 | 170.0 | 51.7 | |
| | GO-3-79 | Reagan Fields, Alta. | 79-05-01 | 93-12-31 | 30.0 | 10.3 | 105.0 |
| | GL-70 | Niagara Falls, Ont. | 86-11-01 | 87-10-31 | 637.4 | 193.9 | 814.1 |
| | | | 87-11-01 | 90-10-31 | 509.9 | 155.1 | |
| | | | 90-11-01 | 91-10-31 | 339.6 | 103.3 | |
| | | | 91-11-01 | 92-10-31 | 169.8 | 51.6 | |

Gas

3. (cont'd) Licences and Long Term Orders to Export Natural Gas as at 31 December 1984

| Exporter | Licence or Order Number | Point of Export | Term of Licence or Order | | Maximum Export Volumes | | |
|--|-------------------------|--|--------------------------|------------|--|---|---|
| | | | From | To | Daily (10 ³ m ³) | Annual (10 ⁶ m ³) | Term (10 ⁶ m ³) |
| 3. Columbia Gas Development of Canada Ltd. | GL-71 | Niagara Falls, Ont. | 89-11-01 | 90-10-31 | 340.0 | 103.4 | 206.7 |
| | | | 90-11-01 | 91-10-31 | 226.4 | 68.9 | |
| | | | 91-11-01 | 92-10-31 | 113.2 | 34.4 | |
| 3. Columbia Gas Development of Canada Ltd. | GL-72 | Aden, Alta. | 88-01-01 | 88-10-31 | 1 133.1 | 236.1 | 1 085.7 |
| | | | 88-11-01 | 90-10-31 | 1 133.1 | 283.3 | |
| | | | 90-11-01 | 91-10-31 | 754.6 | 188.7 | |
| | | | 91-11-01 | 92-10-31 | 377.3 | 94.3 | |
| 4. Consolidated Natural Gas Limited | GL-54 | Monchy, Sask. | 83-04-01 | 83-12-31 | 1 450.0 | 387.7 | 3 556.1 |
| | | | 84-01-01 | 87-12-31 | 1 450.0 | 517.0 | |
| | GL-74 | Huntingdon, B.C. | 80-01-01 | 81-10-31 | 1 110.4 | 368.3 | |
| | | | 81-11-01 | 81-12-31 | 1 450.0 | 70.8 | |
| | | | 82-01-01 | 83-03-31 | 1 450.0 | 423.5 | |
| | GL-44 ^(a) | Monchy, Sask. | 88-01-01 | 88-10-31 | 1 450.0 | 430.8 | 1 981.3 |
| | | | 88-11-01 | 90-10-31 | 1 450.0 | 517.0 | |
| | | | 90-11-01 | 91-10-31 | 965.7 | 344.3 | |
| | | | 91-11-01 | 92-10-31 | 482.8 | 172.2 | |
| 4. Consolidated Natural Gas Limited | GL-61 | Emerson, Man. | 72-03-15 | 92-10-31 | 4 249.2 | 1 274.8 | 18 951.3 |
| | | | 80-11-01 | 85-10-31 | 5 665.6 | 2 067.9 | 13 389.6 |
| | GL-75 | Emerson, Man. and Monchy, Sask. Combined Maximum | 85-11-01 | 86-10-31 | 4 532.5 | 1 654.0 | |
| | | | 86-11-01 | 87-10-31 | 3 824.3 | 1 396.0 | |
| | | | 81-11-01 | 84-10-31 | 3 232.9 | 1 180.0 | 7 278.9 |
| | GL-75 | Maximums permitted at Monchy, Sask. as part of combined Emerson/Monchy volumes | 84-11-01 | 85-10-31 | 3 891.1 | 1 438.4 | |
| | | | 85-11-01 | 86-10-31 | 3 682.6 | 1 344.0 | |
| | | | 86-11-01 | 87-10-31 | 2 620.3 | 956.5 | |
| | | | 87-11-01 | 89-10-31 | 3 824.3 | 1 396.0 | 2 792.0 |
| 5. Canada LNG Corporation | GL-76 | Port Simpson Bay, B.C. | 87-11-01 | 89-10-31 | 1 912.2 | 698.0 | 1 396.0 |
| | | | 87-01-01 | 87-12-31 | N/S | 2 258.0 | 62 761.0 |
| | | | 88-01-01 | 88-12-31 | N/S | 3 309.0 | |
| | | | 89-01-01 | 89-12-31 | N/S | 3 986.0 | |
| | | | 90-01-01 | 2000-12-31 | N/S | 4 136.0 | |
| | | | 2001-01-01 | 2001-03-31 | N/S | 4 362.0 | |
| | | | | | | 1 090.0 | |
| 6. Czar Resources Limited | GO-7-84 | Huntingdon, B.C. | 84-11-01 | 85-10-31 | N/S | 95.9 | 95.9 |
| 7. ICG Transmission Holdings Ltd. | GL-28 | Sprague, Man. | 70-11-01 | 95-10-31 | 80.3 | 9.5 | 229.0 |
| | GL-29 | Fort Frances, Ont. | 70-11-01 | 95-10-31 | 915.6 | 218.5 | 5 462.2 |
| | GL-30 ^(b) | Sprague, Man. | 70-11-01 | 95-10-31 | 1 321.8 | 344.0 | 8 498.1 |

Gas

3. (cont'd) Licences and Long Term Orders to Export Natural Gas as at 31 December 1984

| Exporter | Licence or Order Number | Point of Export | Term of Licence or Order | | Maximum Export Volumes | | |
|-------------------------------------|--|--|--------------------------|----------|--|---|---|
| | | | From | To | Daily (10 ³ m ³) | Annual (10 ⁶ m ³) | Term (10 ⁶ m ³) |
| 8. KannGaz Producers Ltd. | GL-77 | Niagara Falls, Ont. | 84-11-01 | 93-10-31 | 3 540.0 | 1 292.1 | 13 567.0 |
| | | | 93-11-01 | 94-10-31 | 2 655.0 | 969.1 | |
| | | | 94-11-01 | 95-10-31 | 1 770.0 | 646.0 | |
| | | | 95-11-01 | 96-10-31 | 885.0 | 323.0 | |
| 9. Niagara Gas Transmission Limited | GL-55 | Cornwall, Ont. | 80-01-01 | 82-10-31 | 350.0 | 89.1 | 1 500.2 |
| | | | 82-11-01 | 83-03-31 | 350.0 | 37.1 | |
| | | | 83-04-01 | 83-10-31 | 1 200.0 | 145.8 | |
| | | | 83-11-01 | 85-10-31 | 1 200.0 | 250.0 | |
| | | | 85-11-01 | 87-10-31 | 1 200.0 | 275.0 | |
| | GL-78 | | 87-11-01 | 90-10-31 | 1 200.0 | 275.0 | 1 099.7 |
| | | | 90-11-01 | 91-10-31 | 799.2 | 183.1 | |
| | | | 91-11-01 | 92-10-31 | 399.2 | 91.6 | |
| 10. Pan-Alberta Gas Ltd. | GL-95 | Niagara Falls, Ont. | 84-11-01 | 93-10-31 | 4 332.5 | 1 581.4 | 16 604.7 |
| | | | 93-11-01 | 94-10-31 | 3 249.4 | 1 186.0 | |
| | | | 94-11-01 | 95-10-31 | 2 166.2 | 790.7 | |
| | | | 95-11-01 | 96-10-31 | 1 083.1 | 395.4 | |
| | GL-96 (Consolidation of GL-59, 63 & 65) | Kingsgate, B.C. | 84-11-01 | 85-10-31 | 7 478.6 | 2 488.3 | 27 990.9 |
| | | | 85-11-01 | 94-10-31 | 7 478.6 | 2 488.3 | |
| | | | 94-11-01 | 95-10-31 | 4 980.7 | 1 657.2 | |
| | | | 95-11-01 | 96-10-31 | 2 490.7 | 828.6 | |
| | GL-97 (Consolidation of GL-58, 62 & 66) | Monchy, Sask. | 84-11-01 | 85-10-31 | 24 928.5 | 8 294.4 | 82 935.7 |
| | | | 85-11-01 | 94-10-31 | 24 928.5 | 8 294.4 | |
| | | | 94-11-01 | 95-10-31 | 16 602.4 | 5 524.1 | |
| | | | 95-11-01 | 96-10-31 | 8 301.2 | 2 762.0 | |
| 11. ProGas Limited | GL-56 | Emerson, Man. and Monchy, Sask. Combined Maximum | 80-11-01 | 85-10-31 | 9 440.9 | 3 100.0 | 17 050.0 |
| | | | 85-11-01 | 86-10-31 | 7 552.7 | 2 480.0 | |
| | | | 86-11-01 | 87-10-31 | 5 664.5 | 1 860.0 | |
| | | Maximums permitted at Monchy, Sask. as part of combined Emerson/Monchy Volumes | 81-11-01 | 82-10-31 | 2 613.7 | 954.0 | 10 100.7 |
| | | | 82-11-01 | 84-10-31 | 4 849.4 | 1 770.0 | |
| | | | 84-11-01 | 85-10-31 | 6 457.6 | 2 357.0 | |
| | | | 85-11-01 | 86-10-31 | 6 797.4 | 2 480.0 | |
| | | | 86-11-01 | 87-10-31 | 5 098.1 | 1 860.0 | |

Gas

3. (cont'd) Licences and Long Term Orders to Export Natural Gas as at 31 December 1984

| Exporter | Licence or Order Number | Point of Export | Term of Licence or Order | | Maximum Export Volumes | | |
|-----------------------------------|-------------------------|--|--------------------------|----------|--|---|---|
| | | | From | To | Daily (10 ³ m ³) | Annual (10 ⁶ m ³) | Term (10 ⁶ m ³) |
| | GL-79 | Emerson, Man. and Monchy, Sask. Combined Maximum | 87-11-01 | 88-10-31 | 3 776.4 | 1 240.0 | 1 860.0 |
| | | | 88-11-01 | 89-10-31 | 1 888.2 | 620.0 | |
| | GL-80 | Niagara Falls, Ont. | 87-11-01 | 88-10-31 | 3 398.8 | 1 240.0 | 1 674.0 |
| | | | 88-11-01 | 89-10-31 | 1 699.4 | 620.0 | |
| | | | 84-11-01 | 93-10-31 | 1 420.0 | 518.3 | 5 442.1 |
| | | | 93-11-01 | 94-10-31 | 1 065.0 | 388.7 | |
| | GL-81 | Emerson, Man. | 94-11-01 | 95-10-31 | 710.0 | 259.1 | |
| | | | 95-11-01 | 96-10-31 | 355.0 | 129.6 | |
| | | | 83-11-01 | 92-10-31 | 5 270.0 | 1 923.5 | 20 196.7 |
| | | | 92-11-01 | 93-10-31 | 3 952.5 | 1 442.6 | |
| 12. Sulpetro Limited | GL-57 | Niagara Falls, Ont. | 93-11-01 | 94-10-31 | 2 635.0 | 961.7 | |
| | | | 94-11-01 | 95-10-31 | 1 317.5 | 480.9 | |
| | | | 80-01-01 | 80-10-31 | 2 089.1 | 612.8 | 1 869.6 |
| | | | 80-11-01 | 82-10-31 | 2 089.1 | 762.5 | |
| | | | 82-11-01 | 82-11-03 | 2 125.0 | 608.4 | |
| | GL-82 | | 82-11-04 | 83-10-31 | 2 125.0 | 608.4 | |
| | | | 83-11-01 | 84-02-29 | 2 125.0 | 170.0 | |
| | | | 83-11-01 | 87-10-31 | 2 125.0 | 775.6 | 4 653.7 |
| | | | 87-11-01 | 88-10-31 | 1 700.0 | 620.5 | |
| | | | 88-11-01 | 89-10-31 | 1 275.0 | 465.4 | |
| 13. Tenneco LNG Inc. | GL-49 | St. Stephen, N.B. | 89-11-01 | 90-10-31 | 850.0 | 310.2 | |
| | | | 90-11-01 | 91-10-31 | 425.0 | 155.1 | |
| 14. TransCanada PipeLines Limited | GL-18 | Emerson, Man. | (c) | | 32 295.0 | 11 820.0 | (c) |
| | | | 65-11-01 | 66-10-31 | 708.2 | 226.6 | 33 993.4 |
| | GL-19 | Philipsburg, Qué. | 66-11-01 | 89-10-31 | 4 277.5 | 1 481.5 | |
| | | | 65-11-01 | 82-10-31 | 600.6 | 184.1 | 3 059.4 |
| | | | 82-11-01 | 83-10-31 | 634.5 | 184.1 | |
| | | | 83-11-01 | 84-10-31 | 657.2 | 184.1 | |
| | | | 84-11-01 | 85-10-31 | 679.9 | 184.1 | |
| | | | 85-11-01 | 86-10-31 | 702.5 | 184.1 | |
| | | | 86-11-01 | 89-10-31 | 725.2 | 184.1 | |
| | | | 67-11-01 | 91-10-31 | 2 662.8 | 909.3 | 21 670.8 |
| | GL-21 ^(d) | | 68-11-05 | 91-10-31 | N/S | 7 019.1 | 169 967.0 |
| | | | 70-11-01 | 90-10-31 | 5 546.6 | 2 030.1 | 40 601.0 |
| | GL-37 | | 70-11-01 | 90-10-31 | 1 416.4 | 518.4 | 10 368.0 |
| | | | 70-11-01 | 90-10-31 | 204.0 | 74.6 | 1 493.0 |
| | GL-39 | | 71-04-15 | 71-10-31 | N/S | 323.8 | 60 316.5 |
| | | | 71-11-01 | 94-10-31 | N/S | 2 612.3 | |
| | GL-42 ^(d) | | 71-11-01 | 91-10-31 | N/S | 481.6 | 9 631.5 |
| | | | 71-11-01 | 91-10-31 | N/S | | |

Gas

3. (cont'd) Licences and Long Term Orders to Export Natural Gas as at 31 December 1984

| Exporter | Licence or Order Number | Point of Export | Term of Licence or Order | | Maximum Export Volumes | | |
|--|-------------------------|--|--------------------------|----------|--|---|---|
| | | | From | To | Daily (10 ³ m ³) | Annual (10 ⁶ m ³) | Term (10 ⁶ m ³) |
| GL-60 | | | 80-01-01 | 80-10-31 | 6 317.1 | 800.0 | 10 896.4 |
| | | | 80-11-01 | 84-10-31 | 6 317.1 | 2 096.3 | |
| | | | 84-11-01 | 85-10-31 | 4 737.8 | 1 572.2 | |
| | | | 85-11-01 | 85-12-14 | 3 158.6 | 139.0 | |
| GL-83 | | Niagara Falls, Ont. | 84-11-01 | 86-10-31 | 1 133.1 | 414.0 | 9 350.2 |
| | | | 86-11-01 | 94-10-31 | 2 620.3 | 959.0 | |
| | | | 94-11-01 | 95-10-31 | 1 521.3 | 556.8 | |
| | | | 95-11-01 | 96-10-31 | 774.3 | 283.4 | |
| GL-84 | | | 84-11-01 | 93-10-31 | 1 416.4 | 518.4 | 5 054.4 |
| | | | 93-11-01 | 94-10-31 | 1 062.3 | 388.8 | |
| GL-85 | | | 84-11-01 | 93-10-31 | 2 832.8 | 1 036.8 | 10 108.8 |
| | | | 93-11-01 | 94-10-31 | 2 124.6 | 777.6 | |
| GL-86 | | Emerson, Man. | 84-11-01 | 93-10-31 | 2 832.8 | 1 036.8 | 10 886.4 |
| | | | 93-11-01 | 94-10-31 | 2 124.6 | 777.6 | |
| | | | 94-11-01 | 95-10-31 | 1 416.4 | 518.4 | |
| | | | 95-11-01 | 96-10-31 | 708.2 | 259.2 | |
| GL-87 | | | 84-11-01 | 93-10-31 | 2 832.8 | 1 036.8 | 10 886.4 |
| | | | 93-11-01 | 94-10-31 | 2 124.6 | 777.6 | |
| | | | 94-11-01 | 95-10-31 | 1 416.4 | 518.4 | |
| | | | 95-11-01 | 96-10-31 | 708.2 | 259.2 | |
| GL-88 | | Emerson, Man. and/or Niagara Falls, Ont. | 84-11-01 | 93-10-31 | 4 249.2 | 1 555.2 | 16 329.6 |
| | | | 93-11-01 | 94-10-31 | 3 186.9 | 1 166.4 | |
| | | | 94-11-01 | 95-10-31 | 2 124.6 | 777.6 | |
| | | | 95-11-01 | 96-10-31 | 1 062.3 | 388.8 | |
| GL-89 | | Emerson, Man. | 84-11-01 | 85-10-31 | 6 317.1 | 524.1 | 12 960.8 |
| | | | 85-11-01 | 86-10-31 | 6 317.1 | 1 957.3 | |
| | | | 86-11-01 | 90-10-31 | 6 317.1 | 2 096.3 | |
| | | | 90-11-01 | 91-10-31 | 4 207.2 | 1 396.1 | |
| | | | 91-11-01 | 92-10-31 | 2 103.6 | 698.1 | |
| GL-90 | | Niagara Falls, Ont. | 85-11-01 | 94-10-31 | 1 416.4 | 518.4 | 5 443.2 |
| | | | 94-11-01 | 95-10-31 | 1 062.3 | 388.8 | |
| | | | 95-11-01 | 96-10-31 | 708.2 | 259.2 | |
| | | | 96-11-01 | 97-10-31 | 354.1 | 129.6 | |
| 15. Transcontinental Gas Pipe Line Corporation | GL-91 ^(e) | Niagara Falls, Ont. | 84-11-01 | 93-10-31 | 8 498.4 | 1 555.2 | 16 329.6 |
| | | | 93-11-01 | 94-10-31 | 6 373.8 | 1 166.4 | |
| | | | 94-11-01 | 95-10-31 | 4 249.2 | 777.6 | |
| | | | 95-11-01 | 96-10-31 | 2 124.6 | 388.8 | |
| 16. Union Gas Limited | GL-64 | Windsor, Ont. | 80-11-01 | 85-10-31 | 1 100.0 | 284.0 | 1 420.0 |
| | GL-92 | | 85-11-01 | 90-10-31 | 1 100.0 | 284.0 | 1 703.7 |
| | | | 90-11-01 | 91-10-31 | 732.6 | 189.1 | |
| | | | 91-11-01 | 92-10-31 | 366.3 | 94.6 | |

Gas

3. (cont'd) Licences and Long Term Orders to Export Natural Gas as at 31 December 1984

| Exporter | Licence or Order Number | Point of Export | Term of Licence or Order | | Maximum Export Volumes | | |
|--|-------------------------|---|--------------------------|----------|-------------------------------|--------------------------------|------------------------------|
| | | | From | To | Daily (10^3m^3) | Annual (10^6m^3) | Term (10^6m^3) |
| 17. Westcoast Transmission Company Limited | GL-4 | Kingsgate, B.C. | 61-12-10 | 81-12-09 | 4 305.8 | 1 444.7 | 35 250.9 |
| | | | 81-12-10 | 82-10-31 | 4 305.8 | 1 300.0 | |
| | | | 82-11-01 | 84-10-31 | 4 305.8 | 1 444.7 | |
| | | | 84-11-01 | 85-10-31 | 3 229.4 | 1 083.5 | |
| | | | 85-11-01 | 86-10-31 | 2 152.9 | 722.4 | |
| | | | 86-11-01 | 87-10-31 | 1 076.5 | 361.2 | |
| | GL-41 | Huntingdon, B.C. Kingsgate, B.C. & Monchy, Sask. | 71-11-01 | 72-10-31 | 20 773.9 | 7 223.1 | 143 495.2 |
| | | | 72-11-01 | 80-10-31 | 22 922.9 | 7 970.3 | |
| | | | 80-11-01 | 83-03-31 | 24 622.6 | 7 970.3 | |
| | | | 83-04-01 | 83-10-31 | 26 039.0 | 4 706.2 | |
| | | | 83-11-01 | 89-10-31 | 26 039.0 | 8 067.8 | |
| | GL-93 | Huntingdon, B.C. | 89-11-01 | 92-10-31 | 8 498.3 | 3 101.9 | 13 958.5 |
| | | | 92-11-01 | 93-10-31 | 6 373.7 | 2 326.4 | |
| | | | 93-11-01 | 94-10-31 | 4 249.1 | 1 550.9 | |
| | | | 94-11-01 | 95-10-31 | 2 124.6 | 775.5 | |
| | GL-94 | Huntingdon, B.C., Kingsgate, B.C. and Monchy, Sask. Combined Maximum | 89-11-01 | 90-10-31 | 13 731.0 | 4 637.1 | 9 269.5 |
| | | | 90-11-01 | 91-10-31 | 9 144.8 | 3 088.3 | |
| | | | 91-11-01 | 92-10-31 | 4 572.4 | 1 544.1 | |
| | | Maximums permitted at Monchy, Sask. as part of combined Huntingdon/ Kingsgate/Monchy Volumes | 89-11-01 | 90-10-31 | 1 416.4 | 517.0 | |
| | | | 90-11-01 | 91-10-31 | 1 416.4 | 517.0 | |
| | | | 91-11-01 | 92-10-31 | 1 416.4 | 517.0 | |
| | | Maximums permitted at Kingsgate, B.C. as part of combined Huntingdon/ Kingsgate/Monchy Volumes | 89-11-01 | 90-10-31 | 2 832.8 | N/S | |
| | | | 90-11-01 | 91-10-31 | 2 832.8 | N/S | |
| | | | 91-11-01 | 92-10-31 | 2 832.8 | N/S | |

- (a) This licence authorizes the export of natural gas which the licensee has imported near Willow Creek, Sask. pursuant to licence GLI-5.
 - (b) This licence authorizes an export near Sprague, Manitoba for import near Rainy River, Ont.
 - (c) This licence is to commence on the date of initial delivery and expire 20½ years after, or a total term not exceeding 25 years. The liquefied natural gas exported will have been previously imported by the licensee near Saint John, New Brunswick pursuant to licence GLI-7.
 - (d) This licence authorizes an export near Emerson, Manitoba for import near Sault Ste Marie and Sarnia, Ontario, to serve the eastern Canadian market.
 - (e) This licence authorizes the export of natural gas previously imported and stored in Canada.
- N/S Not Specified

Gas

4. Licences and Long Term Orders to Export Propane, Butanes, Ethane and Ethylene as at 31 December 1984

| Exporter | Licence or Order Number | Point of Export | Term of Licence or Order | | Maximum Volumes (m ³) |
|--|---------------------------|--|--|--|--|
| | | | From | To | |
| PROPANE | | | | | |
| 1. Amoco Canada Petroleum Company Ltd. | GL-32 | Any point on the international boundary between Canada and the United States | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 | 92 698 92 698 77 206 |
| | EPR-918-79 ^(a) | Same as GL-32 | 79-09-06 | 96-01-31 | Not Specified |
| 2. Dome Petroleum Limited | GL-31 | Same as GL-32 | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 | 716 983 688 571 656 190 620 476 133 254 133 254 133 254 133 254 143 809 193 016 196 984 169 047 165 873 165 079 162 098 103 968 |
| | GL-46 ^(b) | Same as GL-32 | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 619 047 601 587 547 619 468 254 535 000 535 000 |

Gas

4. (cont'd) Licences and Long Term Orders to Export Propane, Butanes, Ethane and Ethylene as at 31 December 1984

| Exporter | Licence or Order Number | Point of Export | Term of Licence or Order | | Maximum Volumes (m ³) |
|--|---------------------------|---|--|--|---|
| | | | From | To | |
| | EPR-917-79 ^(a) | Same as GL-32 | 79-09-06 | 96-01-31 | Not Specified |
| | EPR-930-84 ^(b) | Any point in the Province of Ontario on the international boundary between Canada and the United States | 84-04-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 | 84-12-31 84-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-04-15 | 458 335 608 335 608 335 608 335 608 335 608 335 608 335 608 335 153 100 |
| 3. Imperial Oil Limited | EPR-922-80 ^(a) | Gretna, Man. | 80-09-01 | 90-08-31 | Not Specified |
| 4. PanCanadian Gas Products Limited | GL-34 | Same as GL-32 | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 | 63 730 63 730 63 730 63 730 63 730 63 730 63 730 53 175 3 968 |
| | EPR-919-79 ^(a) | Same as GL-32 | 79-06-06 | 91-01-31 | Not Specified |
| BUTANES | | | | | |
| 5. Amoco Canada Petroleum Company Ltd. | EBU-133-74 ^(a) | Gretna, Man | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 95-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 95-12-31 | 618 088 575 893 540 176 488 674 423 848 374 315 359 244 308 345 260 131 239 549 205 008 179 455 163 527 135 973 122 506 95 286 91 062 |
| 6. Dome Petroleum Limited | EBU-1-74 ^(b) | Any place on the international boundary between Canada and the United States | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 792 461 773 405 689 235 587 597 528 837 433 551 |

Gas

4. (cont'd) Licences and Long Term Orders to Export Propane, Butanes, Ethane and Ethylene as at 31 December 1984

| Exporter | Licence or Order Number | Point of Export | Term of Licence or Order | | Maximum Volumes (m ³) |
|-------------------------------------|---------------------------|---|--|--|---|
| | | | From | To | |
| | EBU-132-74 ^(a) | Gretna, Man. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 95-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 95-12-31 | 603 129 580 324 556 375 532 601 502 284 452 037 437 093 402 186 352 812 341 711 315 460 299 627 290 273 272 057 265 117 245 012 239 724 |
| | EBU-929-84 ^(b) | Any point in the Province of Ontario on the international boundary between Canada and the United States | 84-04-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 | 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 | 340 650 452 135 452 135 452 135 452 135 452 135 452 135 452 135 128 825 |
| 7. Imperial Oil Limited | EBU-911-80 ^(a) | Gretna, Man. | 80-09-01 | 90-08-31 | Not Specified |
| 8. PanCanadian Gas Products Limited | EBU-134-74 ^(a) | Gretna, Man. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 | 213 822 213 822 213 822 213 822 213 822 240 550 240 550 240 550 240 550 240 550 240 550 240 550 |
| 9. Texaco Canada Inc. | EBU-916-82 ^(a) | Gretna, Man. | 82-07-01 | 92-06-30 | Not Specified |

Gas

4. (cont'd) Licences and Long Term Orders to Export Propane, Butanes, Ethane and Ethylene as at 31 December 1984

| Exporter | Licence or Order Number | Point of Export | Term of Licence or Order | | Maximum Volumes (m ³) |
|------------------------------------|-------------------------|--|--|--|--|
| | | | From | To | |
| ETHANE | | | | | |
| 10. Dome Petroleum Limited | GL-45 ^(b) | Any point on the international boundary between Canada and the United States | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 530 325 537 245 547 703 565 080 571 399 549 883 |
| | GL-47 | Elmore, Sask. and Windsor, Ont. | 78-08-15 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 | 78-12-31 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 | 835 298 2 211 664 2 195 866 2 053 688 1 563 962 1 405 986 1 184 820 458 130 |
| | GO-1-76 ^(a) | Elmore, Sask. | 78-01-01 | 85-12-31 | 3 949 m ³ /year |
| | GL-51 | Elmore, Sask. and Windsor, Ont. | 79-06-21 | 93-12-31 | 19 069 000 |
| ETHYLENE | | | | | |
| 11. Dow Chemical of Canada Limited | EYL-1-76 | Elmore, Sask. Sarnia and Windsor, Ont. | 80-01-01 | 89-12-31 | 158 757 340 kg/year |
| | EYL-2-76 ^(a) | Elmore, Sask. | 78-01-01 | 97-12-31 | 181 438 810 kg/year |

(a) This licence/order authorizes an export of product for subsequent import.

(b) This is an import-export licence/order whereby product exported has been previously imported.

Gas

5. Licences and Long Term Orders to Import Natural Gas as at 31 December 1984

| Importer | Licence or Order Number | Point of Import | Term of Licence or Order | | Maximum Import Volumes | | |
|---|-------------------------|----------------------------------|--------------------------|----------|---|--|--|
| | | | From | To | Daily (10 ³ m ³) | Annual (10 ⁶ m ³) | Term (10 ⁶ m ³) |
| 1. Border Utilities Limited | GO-2-66 | Coutts, Alta. | 66-06-02 | 85-09-14 | 30.0 | N/S | N/S |
| 2. Canadian Western Natural Gas Co. Ltd. | GO-6-66 | Coutts, Alta. | 66-09-22 | 85-09-14 | 30.0 | N/S | N/S |
| | GO-6-84 | | 84-11-01 | 85-10-31 | N/S | 3.4 | 3.4 |
| 3. Consolidated Natural Gas Limited | GLI-5 ^(a) | Willow Creek, Sask. | 71-03-15 | 92-10-31 | 4 249.2 | 1 274.8 | 18 951.3 |
| 4. ICG Transmission Limited | GL-30 ^(b) | Rainy River, Ont. | 70-11-01 | 95-10-31 | 1 321.8 | 344.0 | 8 498.1 |
| 5. Tenneco LNG Inc. | GLI-7 | Saint John, N.B. | | (c) | N/S | 418.68PJ | 8 373.6PJ |
| 6. TransCanada PipeLines Limited | GL-21 ^(d) | Sault Ste-Marie and Sarnia, Ont. | 68-11-05 | 91-10-31 | N/S | 7 019.1 | 169 967.0 |
| | GL-42 ^(d) | | 71-04-15 | 71-10-31 | N/S | 232.8 | |
| | | | 71-11-01 | 94-10-21 | N/S | 2 612.3 | 60 316.5 |
| 7. Transcontinental Gas Pipe Line Corporation | GL-91 ^(e) | Sarnia, Ont. | 84-11-01 | 93-10-31 | 4 249 | 1 555.2 | |
| | | | 93-11-01 | 94-10-31 | 3 156.9 | 1 166.4 | |
| | | | 94-11-01 | 95-10-31 | 2 124.6 | 777.6 | |
| | | | 95-11-01 | 96-10-31 | 1 062.3 | 388.8 | 16 329.6 |

(a) This licence authorizes an import of natural gas which the licensee will subsequently export near Emerson, Manitoba, pursuant to licence GL-44.

(b) This licence authorizes an import of natural gas which the licensee has exported near Sprague, Man.

(c) This licence is to commence on the date of initial delivery and expire 20½ years after, or a total term not exceeding 25 years. This liquefied natural gas hereby imported is to be subsequently exported near St. Stephen, New Brunswick, pursuant to licence GL-49.

(d) This licence authorizes an import of natural gas which the licensee has previously exported near Emerson, Manitoba. This natural gas serves Canadian markets.

(e) This licence authorizes an import of natural gas for storage in Canada and subsequently exported to the United States.

N/S Not Specified

PJ Petajoules

Gas

6. Licences and Long Term Orders to Import Propane, Butanes, Ethane and Ethylene as at 31 December 1984

| Importer | Licence or Order Number | Point of Import | Term of Licence or Order | | Maximum Import Volume (m ³) |
|---|---------------------------|--|--|--|--|
| | | | From | To | |
| PROPANE | | | | | |
| 1. Amoco Canada Petroleum Company Limited | EPR-918-79 ^(a) | Any point on the international boundary between Canada and the United States | 79-09-06 | 96-01-31 | Not Specified |
| 2. Dome Petroleum Limited | GL-46 ^(a) | Sarnia, Ont. Windsor, Ont. | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 619 047 601 587 547 619 468 254 535 000 535 000 |
| BUTANES | | | | | |
| 3. Amoco Canada Petroleum Company Limited | EBU-133-74 ^(a) | Sarnia, Ont. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 | 618 088 575 893 540 176 488 674 423 158 359 244 308 345 260 131 239 549 205 008 179 455 163 527 135 973 122 506 95 286 91 062 |
| 4. Dome Petroleum Limited | EBU-1-74 ^(b) | Sarnia, Ont. Windsor, Ont. | 78-04-01 79-04-01 80-04-01 81-04-01 82-04-01 83-04-01 | 79-03-31 80-03-31 81-03-31 82-03-31 83-03-31 84-03-31 | 792 461 773 405 689 235 587 597 528 837 433 551 |
| | EBU-132-74 ^(a) | Sarnia, Ont. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 | 603 129 580 324 556 375 332 601 502 284 452 037 437 093 402 186 352 812 341 711 315 460 299 627 |

Gas

6. (cont'd) Licences and Long Term Orders to Import Propane, Butanes, Ethane and Ethylene as at 31 December 1984

| Importer | Licence or Order Number | Point of Import | Term of Licence or Order | | Maximum Import Volume (m ³) |
|------------------------------------|---------------------------|--------------------------------|--------------------------|----------|---|
| | | | From | To | |
| 5. Imperial Oil Limited | EBU-911-80 ^(a) | Sarnia, Ont. | 91-01-01 | 91-12-31 | 290 273 |
| | | | 92-01-01 | 92-12-31 | 272 057 |
| | | | 93-01-01 | 93-12-31 | 265 117 |
| | | | 94-01-01 | 94-12-31 | 245 012 |
| | | | 95-01-01 | 95-12-31 | 239 724 |
| 6. PanCanadian Gas Company Limited | EBU-134-74 ^(a) | Sarnia, Ont. | 80-09-01 | 90-08-31 | Not Specified |
| 7. Texaco Canada Inc. | EBU-916-82 ^(a) | Sarnia, Ont. | 79-01-01 | 79-12-31 | 213 822 |
| | | | 80-01-01 | 80-12-31 | 213 822 |
| | | | 81-01-01 | 81-12-31 | 213 822 |
| | | | 82-01-01 | 82-12-31 | 213 822 |
| | | | 83-01-01 | 83-12-31 | 213 822 |
| | | | 84-01-01 | 84-12-31 | 240 550 |
| | | | 85-01-01 | 85-12-31 | 240 550 |
| | | | 86-01-01 | 86-12-31 | 240 550 |
| | | | 87-01-01 | 87-12-31 | 240 550 |
| | | | 88-01-01 | 88-12-31 | 240 550 |
| ETHANE | | | 89-01-01 | 89-12-31 | 240 550 |
| | | | 90-01-01 | 90-12-31 | 240 550 |
| 8. Dome Petroleum Limited | GL-45 ^(b) | Sarnia, Ont. and Windsor, Ont. | 78-04-01 | 79-03-31 | 530 325 |
| | | | 79-04-01 | 80-03-31 | 537 245 |
| | | | 80-04-01 | 81-03-31 | 547 703 |
| | | | 81-04-01 | 82-03-31 | 565 080 |
| | | | 82-04-01 | 83-03-31 | 571 399 |
| | | | 83-04-01 | 84-03-31 | 549 883 |
| | GO-1-76 ^(a) | Windsor, Ont. | 78-01-01 | 85-12-31 | 3 949 m ³ /year |
| ETHYLENE | | | | | |
| 9. Dow Chemical of Canada Limited | EYL-2-76 ^(a) | Windsor, Ont. | 78-01-01 | 97-12-31 | 68 038 860 kg/year |

(a) This licence/order authorizes an import of product which has been previously exported.

(b) This is an import-export licence/order whereby product imported is subsequently exported.

kg Kilogram

Gas

7. Exports of Natural Gas

| Exporter | Licence/ Order Number | Million cubic metres | | |
|---------------------------------------|-----------------------------|----------------------|---------------------|--------------------------------|
| | | 1983 Actual | 1984 Preliminary | Cumulative to 1984-12-31 |
| 1. Alberta & Southern Gas Co. Ltd. | GL-3 | 4 645.6 | 4 727.5 | 99 073.6 |
| | GL-16 | 210.0 | 522.8 | 30 294.6 |
| | GL-24 | 132.5 | 135.6 | 27 497.4 |
| | GL-35 | 2 062.8 | 1 194.2 | 25 182.7 |
| 2. Canadian-Montana Pipe Line Company | CL-5 | 1.8 | .0 | 6 386.2 |
| | CL-17 | .8 | .0 | 3 034.4 |
| | CL-25 | — | .0 | 3 516.3 |
| | CL-36 | 30.3 | — | 1 183.2 |
| | GL-52 | 74.3 | 184.9 | 532.2 |
| | GO-3-79 | 3.4 | 2.1 | 11.0 |
| 3. Consolidated Natural Gas Limited | GL-44 ^(a) | 254.4 | 368.5 | 5 240.6 |
| | GL-61 | 607.3 | 844.6 | 3 528.3 |
| 4. Czar Resources Ltd. | GO-7-84 | .0 | 2.7 | 2.7 |
| 5. ICG Transmission Holdings Ltd. | GL-28 | 8.2 | 8.7 | 115.1 |
| | GL-29 | 151.4 | 146.3 | 2 554.6 |
| | GL-30 ^(b) | 246.6 | 226.9 | 3 894.7 |
| 6. Niagara Gas Transmission Limited | GL-6 | 27.7 | .0 | 2 676.9 |
| | GL-55 | 152.7 | 228.1 | 573.2 |
| 7. Pan-Alberta Ltd. | GL-58 | 3 137.4 | 3 054.6 | 7 619.8 |
| | GL-59 | 1 097.4 | 1 145.3 | 4 169.8 |
| | GL-62 | .0 | 19.2 | 19.2 |
| | GL-63 | .0 | 57.6 | 57.6 |
| | GL-96 | .0 | 81.5 | 81.5 |
| | GL-97 | .0 | 193.2 | 193.2 |
| 8. Progas Limited | GL-56 | 1 493.6 | 1 541.3 | 5 168.5 |
| 9. Sulpetro Limited | GL-57 | 452.7 | 72.3 | 1 867.6 |
| | GL-82 | .0 | 358.7 | 358.7 |
| | GO-4-84 | .0 | 102.6 | 102.6 |

Gas

7. (cont'd) Exports of Natural Gas

| Exporter | Licence/ Order Number | Million cubic metres | | |
|------------------------------------|-----------------------------|----------------------|---------------------|--------------------------------|
| | | 1983 Actual | 1984 Preliminary | Cumulative to 1984-12-31 |
| 10. TransCanada PipeLines Limited | GL-18 | 48.0 | 309.9 | 19 561.0 |
| | GL-19 | 130.6 | 140.8 | 1 882.7 |
| | GL-20 | 403.1 | 377.5 | 13 157.9 |
| | GL-21 ^(c) | 4 506.7 | 5 488.2 | 92 810.0 |
| | GL-37 | 839.9 | 854.1 | 25 449.3 |
| | GL-38 | 178.1 | 492.5 | 6 348.4 |
| | GL-39 | 1.7 | 17.5 | 822.6 |
| | GL-42 ^(c) | 1 677.4 | 2 042.6 | 28 377.5 |
| | GL-43 | .0 | .0 | 1 335.9 |
| | GL-60 | 999.6 | 1 251.1 | 5 957.3 |
| | GL-83 | .0 | 69.1 | 69.1 |
| | GL-89 | .0 | .0 | .0 |
| | GO-1-84 | .0 | .7 | .7 |
| | GO-2-84 ^(c) | .0 | 40.1 | 40.1 |
| 11. Union Gas Limited | GL-64 | 196.4 | 104.3 | 888.4 |
| 12. Westcoast Transmission Limited | GL-4 | 656.4 | 1 452.2 | 28 189.7 |
| | GL-41 | 2 424.9 | 1 681.0 | 69 186.0 |
| | GO-5-84 | .0 | 27.4 | 27.4 |
| GROSS EXPORTS | | 26 854.2 | 29 568.2 | 529 040.2 |
| NET EXPORTS ^(d) | | 20 169.1 | 21 401.9 | 398 677.3 |

(a) This licence authorizes an export of natural gas which the licensee has imported near Willow Creek, Sask. pursuant to licence GLI-5.

(b) This licence authorizes an export near Sprague, Man. for import near Rainy River, Ont.

(c) This licence authorizes an export near Emerson, Man. for import near Sault Ste Marie and Sarnia, Ont. to serve the eastern Canadian markets.

(d) Excludes volumes of licences/orders under footnotes.

Gas

8. Imports of Natural Gas

| Importer | Licence/ Order Number | Million cubic metres | | | Cumulative to 1984-12-31 |
|--|--|--------------------------|----------------------------|------------------------------|--------------------------------|
| | | 1983 Actual | 1984 Preliminary | | |
| 1. Border Utilities Ltd. | GO-2-66 | .9 | .9 | 17.4 | .0 |
| 2. Canadian Western Natural Gas Company Ltd. | GO-6-66 GO-6-84 | 3.0 .0 | 1.2 1.5 | 32.3 1.5 .0 | |
| 3. Consolidated Natural Gas Limited | GLI-5 ^(a) | 258.1 | 374.5 | 5 322.0 | .0 |
| 4. ICG Transmission Holdings Ltd. | GL-30 ^(b) | 246.6 | 226.9 | 3 894.7 | .0 |
| 5. TransCanada PipeLines Limited | GL-21 ^(c) GL-42 ^(c) GO-2-84 ^(c) | 4 480.6 1 840.3 .0 | 5 469.0 2 035.3 39.5 | 92 685.6 28 503.9 39.5 | |
| GROSS IMPORTS | | 6 829.5 | 8 148.8 | 130 496.9 | |
| NET IMPORTS ^(d) | | 3.9 | 3.6 | 51.2 | |

- (a) This licence authorizes an import of natural gas which the licensee will subsequently export near Emerson, Man. pursuant to licence GL-44.
- (b) This licence authorizes an import of natural gas which the licensee has previously exported near Sprague, Man.
- (c) This licence authorizes an import of natural gas which the licensee has previously exported near Emerson, Man. This natural gas serves Canadian markets.
- (d) Excludes volumes of licences/orders under footnotes.

Gas

9. Exports of Propane, Butanes, Ethane and Ethylene Under Licence and Orders — 1984

| Exporter | Licence or Order Number | 1983 Actual | 1984 Preliminary |
|---|--|--|--|
| (in cubic metres) | | | |
| <i>PROPANE</i> | | | |
| 1. Amoco Canada Petroleum Company Limited | GL-32 EPR-918-79 ^(a) EPR-928-83 ^(b) EPR-929-83 ^(b) | 92 695 574 273 4 706 0 | 92 643 791 739 — 0 |
| 2. Dome Petroleum Limited | GL-31 GL-46 ^(b) EPR-917-79 ^(a) EPR-930-84 ^(b) | 133 254 494 882 459 406 — | 133 254 195 521 510 834 294 783 |
| 3. Imperial Oil Limited | EPR-922-80 ^(a) | 409 873 | 428 816 |
| 4. PanCanadian Gas Products Limited | GL-34 EPR-919-79 ^(a) | 0 203 507 | 0 256 839 |
| GROSS EXPORTS | | 2 372 596 | 2 704 429 |
| NET EXPORTS^(c) | | 225 949 | 225 897 |
| <i>BUTANES</i> | | | |
| 5. Amoco Canada Petroleum Company Limited | EBU-133-74 ^(a) EBU-928-83 ^(b) | 365 540 0 | 422 768 0 |
| 6. Dome Petroleum Limited | EBU-1-74 ^(b) EBU-132-74 ^(a) EBU-929-84 ^(b) | 279 283 382 283 — | 72 766 452 031 212 244 |
| 7. Imperial Oil Limited | EBU-911-80 ^(a) | 233 091 | 230 238 |
| 8. PanCanadian Gas Products Limited | EBU-134-74 ^(a) | 84 615 | 103 077 |
| 9. Texaco Canada Incorporated | EBU-916-82 ^(a) | 49 645 | 20 636 |
| GROSS EXPORTS | | 1 394 422 | 1 513 760 |
| NET EXPORTS^(c) | | 0 | 0 |
| <i>ETHANE</i> | | | |
| 10. Dome Petroleum Limited | GL-45 ^(b) GL-47 GL-51 GO-1-76 ^(a) | 457 226 1 589 072 1 241 000 0 | 176 909 1 184 820 1 279 419 0 |
| GROSS EXPORTS | | 3 287 298 | 2 641 148 |
| NET EXPORTS^(c) | | 2 830 072 | 2 464 239 |

Gas

9. (cont'd) Exports of Propane, Butanes, Ethane and Ethylene Under Licence and Orders — 1984

| Exporter | Licence or Order Number | 1983 Actual | 1984 Preliminary |
|------------------------------------|--|--------------------------|--------------------------|
| (in kilograms) | | | |
| <i>ETHYLENE</i> | | | |
| 11. Dow Chemical of Canada Limited | EYL-1-76 ^(d) EYL-2-76 ^(a) | 46 041 696 68 038 860 | 26 779 360 68 030 860 |
| 12. Imperial Oil Limited | EYL-1-82 | 0 | — |
| 13. Petrosar Limited | EYL-2-82 | 0 | — |
| GROSS EXPORTS | | 114 080 556 | 94 810 220 |
| NET EXPORTS ^(c) | | 0 | 0 |

(a) This licence/order authorizes an export of product for subsequent import.

(b) This is an import-export licence/order whereby product exported has been previously imported.

(c) Excludes volumes of licences/orders under footnotes.

(d) This licence authorizes an export of ethylene at Elmore, Sask. with the provision that the exported product *may be* imported at Windsor, Ont. and re-exported at Sarnia or Windsor, Ont. In 1983 and 1984, all that was exported at Elmore, Sask. was imported at Windsor, Ont., and there were no further movement of the product.

Gas

10. Imports of Propane, Butanes, Ethane and Ethylene Under Licence and Orders — 1984

| Importer | Licence or Order Number | 1983 Actual | 1984 Preliminary |
|---|---|-------------------------|-------------------------------|
| (in cubic metres) | | | |
| <i>PROPANE</i> | | | |
| 1. Amoco Canada Petroleum Company Limited | EPR-918-79 ^(a) EPR-928-83 ^(b) EPR-929-83 ^(b) | 569 522 4 706 0 | 800 673 — 0 |
| 2. Dome Petroleum Limited | GL-46 ^(b) EPR-917-79 ^(a) EPR-930-84 ^(b) | 381 496 492 750 — | 102 525 550 745 274 413 |
| 3. Imperial Oil Limited | EPR-922-80 ^(a) | 390 971 | 409 462 |
| 4. PanCanadian Gas Products Limited | EPR-919-79 ^(a) | 203 507 | 256 839 |
| GROSS IMPORTS | | 2 042 952 | 2 394 657 |
| NET IMPORTS ^(c) | | 0 | 0 |

Gas

10. (cont'd) Imports of Propane, Butanes, Ethane and Ethylene Under Licence and Orders — 1984

| Importer | Licence or Order Number | 1983 Actual | 1984 Preliminary |
|---|---|--------------------------|---------------------------------|
| (in cubic metres) | | | |
| BUTANES | | | |
| 5. Amoco Canada Petroleum Company Limited | EBU-133-74 ^(a) EBU-928-83 ^(b) | 362 579 0 | 404 431 0 |
| 6. Dome Petroleum Limited | EBU-1-74 ^(b) EBU-132-74 ^(a) EBU-929-84 ^(b) | 277 967 382 972 — | 73 812 452 035 209 492 |
| 7. Imperial Oil Limited | EBU-911-80 ^(a) | 212 600 | 216 779 |
| 8. PanCanadian Gas Products Limited | EBU-134-74 ^(a) | 84 651 | 103 077 |
| 9. Texaco Canada Incorporated | EBU-916-82 ^(a) | 52 103 | 25 363 |
| GROSS IMPORTS | | 1 372 872 | 1 484 989 |
| NET IMPORTS ^(c) | | 0 | 0 |
| ETHANE | | | |
| 10. Dome Petroleum Limited | GL-45 ^(b) GO-1-76 ^(a) GO-1-83 GO-3-84 | 420 164 0 0 — | 5 710 0 159 994 99 159 |
| GROSS IMPORTS | | 420 164 | 264 863 |
| NET IMPORTS ^(c) | | 2 830 072 | 259 153 |
| (in kilograms) | | | |
| ETHYLENE | | | |
| 11. Dow Chemical of Canada Limited | EYL-1-76 ^(d) EYL-2-76 ^(a) | 46 041 696 68 038 860 | 26 779 360 68 030 860 |
| GROSS IMPORTS | | 114 080 556 | 94 810 220 |
| NET IMPORTS ^(c) | | 0 | 0 |

(a) This licence/order authorizes an import of product which has been previously exported.

(b) This is an import-export licence/order whereby product imported is subsequently exported.

(c) Excludes volumes of licences/orders under footnotes.

(d) This licence authorizes an import of ethylene which has been previously exported at Elmore, Sask., with the provision that the imported product at Windsor, Ont. may be re-exported at Sarnia or Windsor, Ont. In 1983 and 1984, all that was exported at Elmore, Sask. was imported at Windsor, Ont. and there were no further movement of the product.

Gas

11. Total Net Exports of Propane and Butanes (Volumes in cubic metres)

| Exporter | Propane | | Butanes | |
|---------------------------------------|------------------|---------------------|------------------|---------------------|
| | 1983 Actual | 1984 Preliminary | 1983 Actual | 1984 Preliminary |
| Amoco Canada Petroleum Company Ltd. | 275 693 | 313 099 | 376 909 | 388 068 |
| Atlantic Speedy Propane Ltd. | 74 | 70 | — | — |
| Burnwell Gas of Canada Ltd. | 16 740 | 30 220 | — | — |
| Canadian Enterprise Gas Products Ltd. | 41 960 | 37 864 | 16 335 | 46 503 |
| Canadian Superior Oil Ltd. | 39 028 | 53 793 | 36 708 | 91 362 |
| Can-Am Liquids Corp. Ltd. | 12 616 | 12 934 | 5 939 | 1 684 |
| Chevron Canada Resources Ltd. | 157 943 | 128 289 | 36 537 | 6 873 |
| Dillingham Construction Ltd. | 0 | 0 | — | — |
| Dome Petroleum Limited | 645 654 | 766 940 | 595 077 | 603 533 |
| Elgin Petroleum Limited | 2 127 | 585 | 2 040 | 14 862 |
| Gas Supply (Mpls) Ltd. | — | — | 3 484 | 0 |
| Gray Oil Corp. Ltd. | — | — | 359 | 0 |
| Gulf Canada Products Company | 369 | 302 913 | — | 6 221 |
| Home Oil Company Limited | 35 922 | 32 771 | 45 086 | 59 513 |
| Husky Oil Operations Ltd. | 3 326 | 621 | 5 276 | 716 |
| ICG Gaz Liquide Ltée | 10 230 | — | — | — |
| ICG Liquid Gas Ltd. | 16 415 | 37 223 | — | — |
| Imperial Oil Limited | 207 295 | 215 479 | 334 480 | 331 686 |
| Kildair Service Ltée | 0 | 0 | — | 0 |
| Koch Hydrocarbons Canada | 3 893 | 2 168 | 63 720 | 58 260 |
| Mobil Oil Canada Ltd. | 111 215 | 119 731 | 48 940 | 51 982 |
| M-P Oils Ltd. | 10 906 | 7 597 | 3 050 | 15 944 |
| NGL Supply Ltd. | 753 | 2 424 | 2 813 | 15 210 |
| Northern Petro Products Corp. Ltd. | 821 | 234 | 3 101 | 0 |
| PanCanadian Gas Products Ltd. | 178 931 | 165 484 | 84 820 | 91 207 |
| Petro-Canada Inc. | 357 600 | 435 957 | 242 957 | 295 260 |
| Petrowest Petroleum Ltd. | 7 007 | 14 383 | 6 697 | 28 916 |
| Pounder Emulsions Ltd. | — | 1 355 | — | 2 177 |
| Proflame Limited | 322 | — | — | — |
| Raymond Gas Liquids Inc. | 5 076 | 7 374 | 1 827 | 2 067 |
| Rivecal Energy Ltd. | — | — | 612 | 244 |
| Shell Canada Limited | 141 240 | 171 690 | 138 702 | 131 731 |
| Stephens Energy Limited | 86 918 | 63 670 | 52 674 | 80 543 |
| Stillings Canada Petroleum Company | 44 099 | 41 161 | 23 430 | 21 663 |
| Sunoco Inc. | — | 6 269 | — | 11 531 |
| Texaco Canada Inc. | 118 601 | 118 102 | 144 254 | 133 202 |
| Union Oil Co. of Canada Ltd. | 18 478 | 18 074 | — | 366 |
| Union Texas Canada Ltd. | 14 695 | 1 254 | — | — |
| TOTALS | 2 935 570 | 3 109 728 | 2 275 827 | 2 491 324 |

Oil

1. Orders Issued During 1984 Approving New Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

| Applicant | Order No. | Issued | Facilities | Estimated Cost (\$) |
|---------------------------------------|-----------|----------|---|---------------------|
| Interprovincial Pipe Line Limited | XO-2-84 | 84-04-11 | New pump station and 13.2 kilometres of pipeline, Ontario | 11 000 000 |
| Manito Pipelines Ltd. | XO-5-84 | 84-06-20 | Modification and addition of pumping units at existing stations, Saskatchewan | 468 500 |
| Manito Pipelines Ltd. | XO-6-84 | 84-10-04 | Tie-in facilities, Alberta | 7 000 |
| Trans Mountain Pipe Line Company Ltd. | XO-3-84 | 84-04-11 | 0.9 kilometres of pipeline, from Westridge to Shellburn, British Columbia | 841 500 |
| Trans-Northern Pipelines Inc. | XO-1-84 | 84-01-04 | Additions and modifications to pump stations, Ontario | 1 300 000 |
| Trans-Northern Pipelines Inc. | XO-4-84 | 84-05-16 | Pumping equipment, Ontario | 250 000 |

Oil

2. Orders Issued During 1984 Approving Modifications and Additions to Existing Oil Pipeline Facilities

| Applicant | Order No. | Issued | Facilities | Estimated Cost (\$) |
|--|-----------|----------|---|---------------------|
| Cochin Pipe Lines Ltd. | XOM-14-84 | 84-07-25 | Stopple tees, RTU Simulator, etc. | 66 800 |
| Dome NGL Pipeline Ltd. | XOM-13-84 | 84-08-08 | Contingency | 10 000 |
| Dome NGL Pipeline Ltd. and Amoco Canada Petroleum Company Ltd. | XOM-13-84 | 84-08-08 | Pipe replacement, improvements, etc. | 77 320 |
| Interprovincial Pipe Line Limited | XOM-10-84 | 84-07-11 | Station and tankage modifications, injection facilities upgrade natural gas liquids facilities, remote valve control system, etc. | 3 339 930 |
| Interprovincial Pipe Line Limited | XOM-19-84 | 84-09-12 | Heavy injection facilities, additional right-of-way | 2 838 000 |
| Interprovincial Pipe Line Limited | XOM-20-84 | 84-10-24 | Upgrading of stations communication facilities, equipment, buildings, etc. | 19 188 000 |
| Interprovincial Pipe Line Limited | XOM-23-84 | 84-11-07 | Station unit additions, crossovers between 24 and 32-inch lines, etc. | 22 550 000 |
| Interprovincial Pipe Line (NW) Ltd. | XOM-12-84 | 84-07-18 | Injection and metering facilities | 1 400 000 |
| Manito Pipelines Ltd. | XOM-7-84 | 84-06-06 | Control system improvements, metering and station facilities | 412 340 |

Oil

2. (cont'd) Orders Issued During 1984 Approving Modifications and Additions to Existing Oil Pipeline Facilities

| Applicant | Order No. | Issued | Facilities | Estimated Cost (\$) |
|---------------------------------------|-----------|----------|--|---------------------|
| Montreal Pipe Line Limited | XOM-3-84 | 84-02-01 | Ground bed and rectifier installation, operating equipment | 32 300 |
| Montreal Pipe Line Limited | XOM-18-84 | 84-08-29 | Oil sampling equipment and ancillary static mixers | 143 000 |
| Murphy Oil Company Ltd. | XOM-24-84 | 84-11-21 | Metering facility | 85 000 |
| Petroleum Transmission Company | XOM-8-84 | 84-06-27 | Metering facilities, block valves, etc. | 566 500 |
| Trans Mountain Pipe Line Company Ltd. | XOM-1-84 | 84-01-04 | Station equipment, buildings and grounds, tanks, automotive equipment, work and office equipment, communications, etc. | 4 265 440 |
| Trans Mountain Pipe Line Company Ltd. | XOM-2-84 | 84-01-25 | Tank, automotive equipment | 1 111 000 |
| Trans Mountain Pipe Line Company Ltd. | XOM-5-84 | 84-04-04 | Station equipment, communications, etc. | 79 700 |
| Trans Mountain Pipe Line Company Ltd. | XOM-21-84 | 84-10-31 | Station equipment, buildings and grounds, etc. | 821 000 |
| Trans Mountain Pipe Line Company Ltd. | XOM-22-84 | 84-11-07 | Pipe replacement, temporary surface pipe | 205 000 |
| Trans-Northern Pipelines Inc. | XOM-4-84 | 84-02-01 | Station modifications, oil dispatching installations, communications, etc. | 1 153 500 |
| Trans-Northern Pipelines Inc. | XOM-6-84 | 84-02-08 | Clarkson station modifications | 110 000 |
| Trans-Northern Pipelines Inc. | XOM-11-84 | 84-07-11 | Station modifications, pipe replacement, etc. | 220 000 |
| Trans-Northern Pipelines Inc. | XOM-15-84 | 84-08-22 | Computer hardware and software for oil dispatching | 110 000 |
| Trans-Northern Pipelines Inc. | XOM-16-84 | 84-09-05 | Pipeline replacement and lowering | 82 500 |
| Trans-Northern Pipelines Inc. | XOM-17-84 | 84-08-29 | Easement purchase | 52 000 |
| Westspur Pipe Line Company | XOM-9-84 | 84-07-11 | Pipe and tank installations | 371 500 |

Oil

3. Exports of Canadian Crude and Equivalent 1984 and 1983

| Company | Destination | 1984 (E) | | 1983 | |
|--------------------------------|----------------------|-----------------------------|---------------|-----------------------------|-----------------|
| | | Total Cubic Metres for Year | Daily Average | Total Cubic Metres for Year | Daily Average |
| Amoco Products Company | Whiting, Indiana | 1 515 180 | 4 140 | 977 885.6 | 2 679.1 |
| Ashland Oil Inc. | St. Paul, Minnesota | 275 634 | 753 | 116 069.5 | 318.0 |
| Cdn. Hydrocarbons Ltd. | Cut Bank, Montana | — | — | 1 313.8 | 3.6 |
| Clark Oil | Blue Is., Ill. | 828 026 | 2 262 | 116 352.6 | 318.8 |
| Conoco Inc. | Billings, Mt. | 177 736 | 486 | 511 198.9 | 1 401.0 |
| Consumers Power Co. | Bay City, Mich. | 69 752 | 191 | 75 736.6 | 207.4 |
| Exxon | Billing, Mt. | 48 635 | 133 | | |
| Farmers Union Central Exchange | Billings, Montana | 824 029 | 2 251 | 695 214.2 | 1 904.7 |
| Getty Oil | Guernsey, Wyo. | — | — | 95 984.7 | 262.9 |
| C Itoh | Japan | 71 760 | 197 | | |
| Koch Refining Co. | Pine Bend, Minnesota | 7 968 851 | 21 773 | 7 220 290.5 | 19 781.6 |
| Laketon Asphalt Refining Inc. | Laketon, Indiana | 420 054 | 1 148 | 320 007.5 | 876.7 |
| Marathon Oil Co. | Detroit, Michigan | 797 102 | 2 178 | 711 621.1 | 1 949.7 |
| Marubeni Corp. | Japan | — | — | 68 159.2 | 186.7 |
| Mobil Oil Corp. | Joliet, Ill. | 1 891 304 | 5 167 | 1 384 651.5 | 3 793.6 |
| Murphy Oil Corp. | Superior, Wisc. | 324 155 | 886 | 290 166.2 | 794.9 |
| Nippon Oil | Japan | — | — | 71 576.6 | 196.1 |
| Noco Refining | Tonawanda, NY | 174 959 | 478 | 202 188.9 | 553.9 |
| Pilot Petroleum | USG | — | — | 71 398.0 | 195.6 |
| Shell Oil | Washington | 196 564 | 539 | | |
| Simmons Refining | Great Falls, Mt. | — | — | 102 372.4 | 280.4 |
| Sun Oil | Marysville, Mich. | 154 410 | 422 | 471 500.8 | 1 291.8 |
| Textrade | Japan | — | — | 78 962.9 | 216.3 |
| Total Oil Ltd. | Alma, Mich. | 55 659.4 | 1 519 | 24 993.4 | 68.4 |
| Trans World Oil Ltd. | U.S. Gulf | — | — | 243 227.5 | 666.3 |
| Union Oil Co. Calif. | Lemont, Ill. | 315 279 | 861 | 546 510.9 | 1 497.3 |
| United Ref. | Warren, Pa. | 1 623 550 | 4 436 | 1 174 927.1 | 3 219.5 |
| Universal Petroleum | U.S. Gulf | — | — | 60 701.3 | 166.3 |
| U.S. Oil | Lima Ohio | 158 737 | 434 | | |
| Other | — | — | — | 805.8 | 2.2 |
| TOTAL: | | 18 392 311 | 50 252 | 15 633 821.3 | 42 832.3 |

(E) Estimated

Oil

4. Export Charges in 1984 for Crude Oil

(Dollars per cubic metre)

| Type | Jan | Feb | March | April | May | June | July ^(A) | Aug | Sept | Oct | Nov | Dec ^(B) |
|---------------------------|-------|-------|-------|-------|-------|-------|---------------------|-------|-------|-------|-------|--------------------|
| Mixed Blend | 43.75 | 43.75 | 43.75 | 41.85 | 47.05 | 47.05 | 47.05 | 40.45 | 40.45 | 40.45 | 29.45 | 32.55 |
| Waterton Condensate | — | — | — | — | — | — | — | — | — | 31.00 | 20.00 | 23.10 |
| Light Canadian Sour | 32.90 | 32.90 | 32.90 | 31.00 | 37.30 | 37.30 | 42.33 | 38.88 | 38.88 | 38.88 | 27.88 | 31.00 |
| Reagan | 44.30 | 44.30 | 44.30 | 42.40 | 48.70 | 48.70 | 48.70 | 42.10 | 42.10 | 42.10 | 31.10 | 34.20 |
| Rangeland | — | — | — | — | — | 43.45 | 48.17 | 41.57 | 41.57 | 41.57 | 30.57 | 33.65 |
| Lloydminster-type Blends | 16.25 | 16.25 | 16.25 | 16.25 | 20.65 | 22.85 | 29.15 | 31.35 | 31.35 | 31.35 | 31.34 | 34.50 |
| Wainwright/Kinsella Blend | 14.20 | 14.20 | 14.20 | 14.20 | 18.60 | 20.80 | 27.10 | 29.30 | 29.30 | 29.30 | 29.30 | 32.45 |
| Fosterton | 23.25 | 23.25 | 23.25 | 23.25 | 27.65 | 29.85 | 36.15 | 38.35 | 38.35 | 38.35 | 38.55 | 41.50 |
| Smiley-Coleville | 16.15 | 16.15 | 16.15 | 16.15 | 18.80 | 21.00 | 27.30 | 29.50 | 29.50 | 29.50 | 29.50 | 32.65 |
| Bow River | 20.10 | 20.10 | 20.10 | 20.10 | 24.50 | 26.70 | 31.30 | 33.30 | 33.30 | 33.30 | 33.30 | 36.45 |
| Midale | 24.40 | 24.40 | 24.40 | 24.40 | 28.80 | 31.00 | 34.15 | 36.35 | 36.35 | 36.35 | 36.35 | 39.50 |
| Chauvin | 14.55 | 14.55 | 14.55 | 14.55 | 18.95 | 21.15 | 27.45 | 29.65 | 29.65 | 29.65 | 29.65 | 32.80 |
| Cold Lake | 2.15 | 2.15 | 2.15 | 2.15 | 7.50 | 9.70 | 16.00 | 18.20 | 18.20 | 18.20 | 18.20 | 21.35 |

(A) Export charges are effective on 13 July 1984.

(B) After giving effect to a general reduction of \$11.00 per cubic metre to light grades.

Oil

5. Export Charges in 1984 for Refined Petroleum Products (Dollars per cubic metre)

Eastern Canadian Refineries (Quebec and Atlantic Provinces)

| | Jan | Feb | March | April | May | June | July | Aug | Sept | Oct | Nov | Dec |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <i>Petroleum Products*</i> | | | | | | | | | | | | |
| ex Montreal Refineries | 43.05 | 42.13 | 40.79 | 41.42 | 49.23 | 47.62 | 48.47 | 51.94 | 55.63 | 54.03 | 55.60 | 57.89 |
| ex other Refineries | 37.60 | 36.40 | 35.05 | 35.82 | 43.50 | 41.88 | 42.69 | 46.19 | 49.75 | 48.26 | 49.74 | 51.95 |
| Asphalt | 34.94 | 34.94 | 34.19 | 34.19 | 37.00 | 36.47 | 36.47 | 37.91 | 39.14 | 38.60 | 39.13 | 40.20 |

* motor gasoline, middle distillates, heavy fuel oil, partially processed oil

Oil

6. Export Charges in 1984 for Refined Petroleum Products (Dollars per cubic metre) (Ontario, Prairies Provinces and British Columbia)

| Type | Jan | Feb | March | April | May | June | July | Aug | Sept | Oct | Nov | Dec |
|--------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <i>Motor Gasoline</i> | | | | | | | | | | | | |
| ex Ont/BC | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 34.04 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 |
| ex Prairies | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 27.75 |
| <i>Middle Distillate</i> | | | | | | | | | | | | |
| ex Ontario | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 37.19 | 34.04 | 30.89 | 30.89 | 35.61 | 35.61 |
| ex Prairies | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 |
| ex B. C. | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 37.19 | 34.04 | 30.89 | 30.89 | 30.89 | 30.89 |
| <i>Heavy Fuel Oil</i> | | | | | | | | | | | | |
| ex Ontario | 30.89 | 30.89 | 37.19 | 37.19 | 37.19 | 40.34 | 40.34 | 40.34 | 40.34 | 40.34 | 40.34 | 37.20 |
| ex Prairies | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 |
| ex B. C. | 37.60 | 36.40 | 35.05 | 35.82 | 43.50 | 41.88 | 42.69 | 46.19 | 49.75 | 48.26 | 49.74 | 51.95 |
| <i>Partially Processed Oil</i> | | | | | | | | | | | | |
| | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 27.75 |
| <i>Asphalt</i> | | | | | | | | | | | | |
| | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 | 30.89 |

Oil

7. Exchanges of Crude Oil and Equivalent with the United States via Mid-Continent Pipeline Systems — 1984

| Licence Holder | Exchange Partner | Estimated Quantity in Cubic Metres | |
|--------------------|------------------|---------------------------------------|----------|
| | | Exported | Imported |
| Imperial Oil Ltd. | Gladieux | 14 500 | 17 300 |
| Petro Canada Inc. | Murphy | 44 385 | 38 860 |
| Shell Canada Ltd. | Shell Oil Co. | 140 000 | 131 700 |
| Shell Canada Ltd. | Conoco Inc. | 284 400 | 293 950 |
| Texaco Canada Ltd. | Texaco Inc. | 319 337 | 308 100 |
| Suncor | Sun Oil | 127 700 | 135 350 |
| TOTAL: | | 930 322 | 925 260 |

Oil

8. Eastern Canadian Exchange Shipments — 1984

| Licence Holder | Exchange Partner | Estimated Quantity in Cubic Metres | |
|----------------------|------------------|---------------------------------------|-----------|
| | | Exported | Imported |
| Petro Canada Inc. | United Refining | 609 410 | 466 349 |
| Texaco Canada Inc. | Texaco Inc. | 301 331 | 300 721 |
| Ultramar Canada Inc. | Conoco Inc. | 895 279 | 922 915 |
| Ultramar Canada Inc. | Texaco Inc. | 78 652 | 78 657 |
| Total | | 1 884 672 | 1 768 642 |

Oil

9. Exports of Licensed Petroleum Products and Imports of Heavy Fuel Oil — 1984 (cubic metres)

| Month | Exports | | | | | Imports | |
|--------------|-------------------------------|--------------------------------|-------------------|----------------------|-----------|-------------|-------------------|
| | Partially Processed Oil | Motor Gasoline and Jet B | Heavy Fuel Oil | Middle Distillate | Asphalt | Total | Heavy Fuel Oil |
| January | 25 789.0 | 126 366.5 | 139 139.7 | 228 775.4 | 273.6 | 520 344.2 | 190 738.9 |
| February | 46 069.6 | 88 902.6 | 120 198.0 | 238 124.1 | 1 001.7 | 494 296.0 | 166 018.9 |
| March | 46 248.5 | 252 802.1 | 232 736.2 | 183 849.2 | 1 100.0 | 716 736.0 | 64 784.5 |
| April | 30 064.4 | 270 078.8 | 145 076.5 | 189 788.1 | 4 990.3 | 639 998.1 | 75 056.6 |
| May | 55 265.4 | 155 775.5 | 148 472.9 | 367 122.5 | 20 416.7 | 747 053.0 | 106 247.0 |
| June | 48 007.3 | 83 986.6 | 149 219.5 | 208 665.8 | 45 338.6 | 535 217.8 | 71 004.1 |
| July | 35 809.7 | 80 865.7 | 175 155.5 | 163 024.7 | 51 449.4 | 506 305.0 | 85 554.7 |
| August | 37 736.0 | 92 304.3 | 101 470.5 | 228 747.2 | 50 089.7 | 510 347.7 | 34 619.8 |
| September | 51 668.9 | 242 404.9 | 69 149.9 | 324 251.2 | 39 113.2 | 726 614.0 | 47 193.3 |
| October | 45 658.8 | 98 989.0 | 118 249.5 | 232 219.0 | 29 180.5 | 524 296.8 | 86 871.9 |
| November | 40 000.0 | 57 100.0 | 150 300.0 | 171 400.0 | 26 900.0 | 445 700.0 | 77 923.0 |
| December (E) | 130 000.0 | 115 000.0 | 117 000.0 | 215 000.0 | 1 000.0 | 58 700.0 | 67 900.0 |
| Total | 592 317.6 | 1 664 576.0 | 1 666 168.2 | 2 750 967.2 | 279 853.7 | 6 953 908.6 | 1 073 912.7 |

(E) Estimated

Electricity

1. Certificates of Public Convenience and Necessity for International Power Lines Pursuant to Section 44 Issued During 1984

| Applicant | Facilities | Estimated Cost | Hearing Commenced | Issued | Certificate No. |
|-----------------|---|----------------|-------------------|--------------|-----------------|
| 1. Hydro-Québec | One international power line of ± 450 kV HVDC extending 77.5 km from the Des Cantons substation to a point on the international boundary line located 610 m West of international marker 532 in the municipality of Saint-Mathieu-de-Dixville in the Province of Québec. The line includes the AC to DC Convertor facilities. | \$ 231 851 000 | 15 May 1984 | 28 Nov. 1984 | EC-III-21 |

Electricity

2. Orders Relating to International Power Lines Issued During 1984

| Type of Order | Applicant | Facilities | Issued | Order No. |
|---|--|---|-------------|-----------|
| Leaves to abandon and Revocation Order to Certificate of Public Convenience and Necessity Pursuant to Subsection 43(3) and 47(3). | 1. The New Brunswick Electric Power Commission | Order Revoking the Certificate No. EC-2 | 5 Sep. 1984 | RO-EC-2 |
| Exemption Order Pursuant to Sections 40, 41 and 43. | 1. The New Brunswick Electric Power Commission | One International Power Line extending from the first distribution transformer in Canada to the international boundary line at River de Chute, New Brunswick. This single circuit single phase line operates at 7.2 kV. | 5 Sep. 1984 | XE-1-84 |

Electricity

3. Licences to Export Electric Power and Energy Pursuant to Section 82 Issued During 1984

| Applicant | Class | Megawatts | Annual Gigawatt-Hours | Term | | Hearing Commenced | Issued | Licence No. |
|--|--------------------------------|-----------|-----------------------|----------|----------|-------------------|--------------|-------------|
| | | | | From | To | | | |
| 1. Hydro-Québec | Interruptible | — | 7 000 | 84-09-01 | 02-08-31 | 19 Sept. 1983 | 17 Jan. 1984 | EL-151 |
| 2. Hydro-Québec | Interruptible ^(a) | 2699 | 23 564 | 84-06-01 | 95-08-31 | 19 Sept. 1983 | 17 Jan. 1984 | EL-152 |
| 3. Hydro-Québec | Interruptible ^(a) | 2699 | 23 564 | 84-06-01 | 95-08-31 | 19 Sept. 1983 | 17 Jan. 1984 | EL-153 |
| 4. Hydro-Québec | Short Term Firm ^(b) | 1700 | 11 220 | 84-04-05 | 92-11-30 | 19 Sept. 1983 | 17 Jan. 1984 | EL-154 |
| 5. Hydro-Québec | Short Term Firm ^(c) | 1700 | 13 140 | 84-04-05 | 88-12-31 | 19 Sept. 1983 | 17 Jan. 1984 | EL-155 |
| 6. Hydro-Québec | Carrier Transfer | 5 | 25 | 84-07-01 | 02-08-31 | 19 Sept. 1983 | 17 Jan. 1984 | EL-156 |
| 7. St. Lawrence Power Company | Carrier Transfer | 50 | 250 | 84-08-23 | 89-06-30 | 3 Apr. 1984 | 3 May 1984 | EL-158 |
| 8. St. Lawrence Power Company | Interruptible | — | 150 | 84-08-23 | 89-06-30 | 3 Apr. 1984 | 3 May 1984 | EL-159 |
| 9. St. Lawrence Power Company | Carrier Transfer | — | 150 | 84-08-23 | 89-06-30 | 3 Apr. 1984 | 3 May 1984 | EL-160 |
| 10. Canadian Niagara Power Company Limited | Interruptible | — | 500 | 84-10-01 | 89-09-30 | 3 Apr. 1984 | 3 May 1984 | EL-161 |
| 11. British Columbia Hydro and Power Authority | Firm | 2000 | 6 000 | 84-09-05 | 88-09-30 | 26 Mar. 1984 | 9 Jul. 1984 | EL-162 |
| 12. British Columbia Hydro and Power Authority | Interruptible ^(d) | — | 15 000 | 84-10-01 | 90-09-30 | 26 Mar. 1984 | 9 Jul. 1984 | EL-163 |
| 13. British Columbia Hydro and Power Authority | Carrier Transfer | — | 3 000 | 84-10-01 | 90-09-30 | 26 Mar. 1984 | 9 Jul. 1984 | EL-164 |
| 14. Hydro-Québec | Interruptible | — | 3 000 | 86-09-01 | 04-11-01 | 15 May 1984 | 10 Aug. 1984 | EL-165 |
| 15. Hydro-Québec | Interruptible | — | 4 000 | 86-09-01 | 02-08-31 | 15 May 1984 | 10 Aug. 1984 | EL-166 |
| 16. Hydro-Québec | Interruptible ^(e) | 790 | 6 920 | 86-09-01 | 95-08-31 | 15 May 1984 | 10 Aug. 1984 | EL-167 |

(a) Total exports not to exceed 2699 MW of power and 23 564 GW.h of energy when combined with exports made pursuant to another licence under which the power and energy is transmitted over the lines authorized by Certificate of Public Convenience and Necessity Nos. EC-III-15 and EC-10.

(b) Limited by exports under licence EL-155.

(c) Limited by exports under licence EL-154.

(d) Total exports should not exceed 15 000 GW.h when combined with exports under licence EL-162.

(e) The exports not to exceed 790 MW of power and 6 920 GW.h of energy when combined with exports made pursuant to another licence under which the power and energy is transmitted over the lines authorized by Certificate of Public Convenience and Necessity Nos. EC-III-17 and EC-III-21.

Electricity

4. Orders Relating to Export of Electric Power and Energy Issued During 1984

Orders Issued Pursuant to Section 7 of the Regulations under Part VI of the Act

| Applicant | Class | Kilowatts | Annual Megawatt Hours | Term | | | Order No. |
|--|------------------|-----------|-----------------------|----------|----------|--------------|-----------|
| | | | | From | To | Issued | |
| 1. British Columbia Hydro and Power Authority | Firm | — | 14 300 | 84-10-01 | 87-09-30 | 11 Apr. 1984 | ELO-179 |
| 2. Hydro-Québec | Firm | 240 | 480 | 84-08-01 | 87-07-31 | 24 Jul. 1984 | ELO-180 |
| 3. Hydro-Québec | Firm | 240 | 480 | 84-08-01 | 87-07-31 | 24 Jul. 1984 | ELO-181 |
| 4. Hydro-Québec | Firm | 40 | 80 | 84-08-01 | 87-07-31 | 24 Jul. 1984 | ELO-182 |
| 5. St. Lawrence Power Company | Carrier Transfer | 50 000 | 250 000 | 84-07-01 | 84-08-23 | 28 Jun. 1984 | ELO-183 |
| 6. St. Lawrence Power Company | Interruptible | — | 15 000 | 84-07-01 | 84-08-23 | 28 Jun. 1984 | ELO-184 |
| 7. St. Lawrence Power Company | Carrier Transfer | — | 150 000 | 84-07-01 | 84-08-23 | 28 Jun. 1984 | ELO-185 |
| 8. Manitoba Hydro | Firm | 30 000 | 131 000 | 84-11-01 | 85-04-30 | 17 Oct. 1984 | ELO-186 |
| 9. West Kootenay Power and Light Company Limited | Firm | 20 | 50 | 85-01-01 | 87-12-31 | 12 Dec. 1984 | ELO-187 |

Electricity

5. Exports of Electric Energy During the Calendar Year 1984

Megawatt Hours

| Exporter | Licence Number | Licence Authorization | | Gross Energy Exported | | | Reported Dollar Value of Export | |
|---|---------------------------|---------------------------|--------------------------|-----------------------|---------------|-------------------------|---------------------------------|---------------|
| | | Firm | Interruptible | Firm | Interruptible | Exchange ⁽¹⁾ | Firm | Interruptible |
| 1. Maine and New Brunswick Electrical Power Company Limited | EL-22 | 250 000 | — | 109 833 | — | — | 1 514 798 | — |
| | EL-23 | — | 25 000 | — | — | — | — | — |
| 2. Fraser Inc. | EL-122 | 400 000 | — | 340 450 | — | — | 14 474 419 | — |
| | EL-123 | — | 50 000 | — | — | — | — | — |
| 3. The New Brunswick Electric Power Commission | EL-64 | 3 504 000 | — | 551 177 | — | -1 068 | 42 605 588 | — |
| | EL-137 | 876 000 | — | 786 981 | — | -12 726 | 50 206 740 | — |
| | EL-138 | 876 000 | — | 786 981 | — | -12 726 | 50 311 048 | — |
| | EL-139 | 92 000 | — | 44 985 | — | -2 749 | 3 081 750 | — |
| | EL-140 | — | 6 482 400 ⁽²⁾ | — | 2 772 216 | 244 | — | 148 543 352 |
| | EL-141 | 1 226 400 | — | — | — | 406 359 | — | — |
| | EL-142 | 140 000 | — | — | — | — | — | — |
| | EL-143 | — | 300 000 | — | 99 146 | -15 495 | — | 6 499 841 |
| | EL-144 | 250 000 | — | — | — | 14 357 | — | — |
| | EL-145 | — | 179 000 | — | 4 720 | -2 817 | — | 271 063 |
| | EL-150 | 1 138 000 | — | 196 745 | — | -3 181 | 12 535 642 | — |
| | ELO-169 | 345 | — | 217 | — | — | 15 314 | — |
| to ELO-171 | | | | | | | | |
| TOTAL NEW BRUNSWICK | | | | 2 817 369 | 2 876 082 | 370 198 | 174 745 299 | 155 314 256 |
| 4. Cedars Rapids Transmission Company Limited | ELO-174 | 20 000 | — | — | — | — | — | — |
| 5. Hydro-Québec | EL-96 | 3 000 000 | — | 3 000 000 | — | — | 119 389 952 | — |
| * EL-113 | — | 10 200 000 ⁽³⁾ | — | 3 558 831 | 1 111 | — | 117 549 351 | — |
| EL-131 | — | 320 000 | — | — | — | — | — | — |
| EL-132 | 172 500 | — | 80 493 | — | — | 2 982 077 | — | — |
| EL-133 | — | 525 000 ⁽⁴⁾ | — | 159 062 | — | — | 6 091 215 | — |
| EL-151 | — | 7 000 000 | — | 538 299 | — | — | 19 837 887 | — |
| EL-152 | — | 23 564 000 ⁽⁵⁾ | — | 658 755 | — | — | 21 119 410 | — |
| EL-153 | — | 23 564 000 ⁽⁵⁾ | — | 3 243 677 | 661 | — | 100 804 020 | — |
| EL-154 | 11 220 000 ⁽⁶⁾ | — | — | — | — | — | — | — |
| EL-155 | 13 140 000 ⁽⁶⁾ | — | — | — | — | — | — | — |
| EL-156 | 25 000 | — | — | — | 3 660 | — | — | — |
| ELO-158 | — | — | — | — | — | — | — | — |
| to ELO-165 | — | — | — | — | — | — | — | — |
| and ELO-180 | — | — | — | — | — | — | — | — |
| to ELO-182 | 1 752 | — | 982 | — | — | 44 137 | — | — |
| * ELO-178 | 20 000 | — | — | — | 4 804 | — | — | — |
| TOTAL QUÉBEC | | | | 3 081 475 | 8 158 624 | 10 236 | 122 416 166 | 265 401 883 |

Electricity

5. (cont'd) Exports of Electric Energy During the Calendar Year 1984

Megawatt Hours

| Exporter | Licence Number | Licence Authorization | | Gross Energy Exported | | | Reported Dollar Value of Export | |
|---|----------------|------------------------|---------------------------|-----------------------|---------------|-------------------------|---------------------------------|---------------|
| | | Firm | Interruptible | Firm | Interruptible | Exchange ⁽¹⁾ | Firm | Interruptible |
| 6. Ontario Hydro | EL-32 | 15 000 | — | 997 | — | — | 1 994 | — |
| | EL-134 | — | 10 000 000 | — | — | 191 120 | — | — |
| | EL-135 | 10 500 000 | — | 4 066 593 | — | — | 173 683 196 | — |
| | EL-136 | — | 25 000 000 ⁽⁷⁾ | — | 6 548 005 | 25 067 | — | 253 180 391 |
| | ELO-166 | 200 | — | 10 | — | — | 859 | — |
| 7. Canadian Niagara Power Company Limited | * EL-124 | 130 000 | — | — | — | — | — | — |
| | * EL-125 | — | 380 000 | — | 259 020 | 12 376 | — | 10 398 354 |
| | EL-161 | — | 500 000 | — | 108 945 | 3 154 | — | 4 452 682 |
| | * ELO-175 | — | 75 000 | — | — | — | — | — |
| 8. Boise Cascade Canada Ltd. | ELO-177 | — | 70 000 | — | — | — | — | — |
| 9. The Detroit and Windsor Subway Company | ELO-173 | 2 000 | — | 1 070 | — | — | — | — |
| 10. The Canadian Transit Company | ELO-167 | 25 | — | 24 | — | — | — | — |
| 11. St. Lawrence Power Company | EL-158 | — | 250 000 | — | — | 81 727 | — | — |
| | EL-159 | — | 150 000 | — | 71 668 | — | — | 2 198 734 |
| | EL-160 | — | 150 000 | — | — | 77 | — | — |
| 12. Dow Chemical of Canada Limited | * EL-121 | — | 438 000 | — | — | — | — | — |
| TOTAL ONTARIO | | | | 4 068 694 | 6 987 638 | 313 521 | 173 686 049 | 270 230 161 |
| 13. Manitoba Hydro and | EL-97 | — | 1 500 000 | — | 1 476 973 | — | — | 23 675 826 |
| | EL-98 | 876 000 | — | 178 640 | — | — | 5 858 157 | — |
| | EL-99 | 262 800 | — | 262 800 | — | — | 3 974 453 | — |
| | EL-100 | — | 800 000 | — | — | — | — | — |
| | EL-101 | 2 500 000 | — | — | — | — | — | — |
| | EL-102 | 5 000 000 | — | — | — | — | — | — |
| | EL-103 | — | 12 000 000 ⁽⁸⁾ | — | 3 148 970 | -38 581 | — | 60 710 765 |
| | ELO-172 | — | — | — | — | — | — | — |
| | ELO-176 | 7 899 | — | 1 795 | — | — | 47 079 | — |
| | ELO-186 | 131 000 | — | 26 350 | — | — | 574 858 | — |
| TOTAL MANITOBA | | | | 469 585 | 4 625 943 | -38 581 | 10 454 547 | 84 386 591 |
| 14. Saskatchewan Power | EL-117 | 438 000 | — | 58 680 | — | — | 1 575 460 | — |
| | EL-119 | — | 876 000 ⁽⁹⁾ | — | — | 27 220 | — | — |
| | EL-120 | 876 000 ⁽⁸⁾ | — | — | — | — | — | — |
| TOTAL SASKATCHEWAN | | | | 58 680 | 0 | 27 220 | 1 575 460 | 0 |

Electricity

5. (cont'd) Exports of Electric Energy During the Calendar Year 1984

| Exporter | Licence Number | Megawatt Hours | | | | | | Reported Dollar Value of Export | |
|---|----------------|-----------------------|----------------------------|-----------------------|---------------|-------------------------|-------------|---------------------------------|------------|
| | | Licence Authorization | | Gross Energy Exported | | | Firm | Interruptible | |
| | | Firm | Interruptible | Firm | Interruptible | Exchange ⁽¹⁾ | | | |
| 15. British Columbia Hydro and Power Authority | * EL-126 | 32 000 | — | 9 566 | — | — | 394 840 | — | |
| | * EL-127 | — | 2 000 000 | — | — | 792 285 | — | — | |
| | * EL-128 | 3 000 000 | — | — | — | — | — | — | |
| | * EL-129 | — | 525 600 | — | — | — | — | — | |
| | * EL-130 | — | 10 000 000 | — | 2 765 890 | 1 435 672 | — | — | |
| | EL-162 | 6 000 000 | — | 341 740 | — | — | 9 007 865 | — | 80 816 847 |
| | EL-163 | — | 15 000 000 ⁽¹⁰⁾ | — | 1 153 308 | 1 125 508 | — | — | 22 326 197 |
| | EL-164 | — | 3 000 000 | — | — | 201 787 | — | — | |
| | ELO-168 | 14 900 | — | 4 512 | — | — | 223 681 | — | |
| | and ELO-179 | — | — | — | — | — | — | — | |
| 16. Cominco Ltd. | EL-146 | 50 000 | — | — | — | — | — | — | |
| | EL-147 | — | 1 100 000 | — | 153 294 | 6 541 | — | — | |
| | EL-148 | 250 000 | — | — | — | 25 000 | — | — | 4 485 000 |
| | EL-149 | — | 1 000 000 | — | — | — | — | — | |
| 17. West Kootenay Power and Light Company Limited | ELO-157 | 50 | — | 32 | — | — | 1 317 | — | |
| TOTAL BRITISH COLUMBIA | | | | 355 850 | 4 072 492 | 3 586 793 | 9 627 703 | 107 628 044 | |
| TOTAL CANADA ⁽¹¹⁾ | | | | 10 851 653 | 26 720 779 | 4 269 387 | 492 505 224 | 882 960 935 | |

* expired during 1984

- (1) Exchange is no value energy. It includes inadvertent and circulating flow, equichange, storage adjustment transfer and wheeling or carrier transfer.
- (2) Total exports should not exceed 6 482.4 GW.h when combined with the amounts exported under Licences EL-64, EL-137, EL-138 and EL-150.
- (3) Total exports should not exceed 10 200 GW.h when combined with the amount exported under Licence EL-96.
- (4) Total exports should not exceed 525 GW.h when combined with the amount exported under Licence EL-132.
- (5) Total exports not to exceed 23 564 GW.h when combined with exports made pursuant to another licence under which the energy is transmitted over the lines authorized by Certificate of Public Convenience and Necessity Nos. EC-III-15 and EC-10.
- (6) Total exports under EL-154 and EL-155 should not exceed 13 140 GW.h when combined together.
- (7) Total exports should not exceed 25 000 GW.h when combined with the amount exported under Licence EL-135.
- (8) Total exports should not exceed 12 000 GW.h when combined with the amounts exported under Licences EL-97, EL-98, EL-99, EL-100, EL-101 and EL-102.
- (9) Total exports under Licences EL-119 and EL-120 should not exceed 876 GW.h. when combined together.
- (10) Total exports should not exceed 15 000 GW.h when combined with exports under licence EL-162.
- (11) Excludes 595 649 \$ revenue for wheeling, transmission, unit rental and storage transfer charges.

Electricity

6. Total Electricity Supply and Demand in Canada and Trade with the United States — 1980-1984

| | Gigawatt Hours | | | | |
|---------------------|----------------|---------|---------|---------|------------|
| | 1980 | 1981 | 1982 | 1983 | 1984 |
| Total Generation | 367 306 | 380 096 | 376 752 | 395 839 | 425 000(p) |
| Imports from U.S.A. | 2 940 | 1 497 | 2 849 | 3 179 | 2 750 |
| Total Supply | 370 246 | 381 593 | 379 601 | 399 018 | 427 750(p) |
| Exports to U.S.A. | 30 181 | 35 372 | 34 220 | 38 830 | 41 842 |
| Total Consumption | 340 065 | 346 221 | 345 381 | 360 188 | 385 908(p) |

(p) Preliminary

Senior Staff of the Board

Office of the Executive Director

| | |
|-------------------|--------------------------------------|
| R. St.G. Stephens | Executive Director |
| G.H. Shaw | Manager, Program Planning and Review |
| J.L. Thompson | Assistant Director, Personnel |
| W. Ganim | Chief, Internal Audit |
| J.S. Klenavic | Director, Plans |
| M.J. McNamara | Assistant Director, Finance |

Energy Studies

| | |
|------------|--------------------|
| P.L. Miles | A/Director General |
|------------|--------------------|

Economics Branch

| | |
|-------------------|--|
| P.L. Miles | Director |
| R.E. Jackson, Jr. | A/Assistant Director, Economic Analysis |
| J.S. Oh | Assistant Director, Regulatory Economics and Energy Statistics |
| (vacant) | Assistant Director, Forecasting and Energy Market Analysis |

Energy Supply Branch

| | |
|------------|---|
| W.A. Hiles | Director |
| E. Kutney | Assistant Director, Geology and Reserves |
| K. Poole | Assistant Director, Gas Supply |
| G.C. Hos | Assistant Director, Oil and Alternative Energy Supply |

Systems Development Branch

| | |
|-------------|--|
| D. Emmens | Director |
| K.E. Begley | Assistant Director, Systems and Operations |
| K.S. Song | Assistant Director, Planning and Data Base |

Pipeline Regulation

| | |
|--------------|------------------|
| K.W. Vollman | Director General |
|--------------|------------------|

Pipelines Engineering-Operations Branch

| | |
|---------------|---|
| E.L.M. Gordon | A/Director |
| R.M. White | A/Assistant Director, Engineering |
| D. Foulger | A/Assistant Director, Construction and Operations |

Financial Regulatory Branch

| | |
|--------------|-----------------------|
| D.D. Epp | Director ¹ |
| G.S. Johnson | Assistant Director |
| C.M. Yeates | Assistant Director |

Environment and Right of Way Branch

| | |
|----------------|--|
| P.A. Carr | A/Director |
| J.A. Hodges | Assistant Director, Environment Group |
| G.E. Marquardt | Assistant Director, Right-of-Way Group |

Electric Power Branch

| | |
|--------------|--------------------------------|
| A.N. Karas | A/Director |
| W.H. Correll | A/Assistant Director, Planning |
| T. Olszewski | Assistant Director, Operations |

Gas Branch

| | |
|----------------|--|
| S.R. Ironstone | Director |
| A.L. Browne | Assistant Director, Gas Industry and Market Analysis |
| R.S. Green | Assistant Director, Gas Regulations and Licences |

Oil Branch

| | |
|----------------|--------------------------------|
| P.G. Scotchmer | Director |
| B.P. Leakey | Assistant Director, Evaluation |
| R.B. Stevens | Assistant Director, Operations |

Law Branch

| | |
|------------------|---------------------------|
| F.H. Lamar, Q.C. | General Counsel |
| S.K. Fraser | Assistant General Counsel |

Office of the Secretary

| | |
|-----------------|-------------------------------------|
| G. Yorke Slader | Secretary |
| N. Bourque | Assistant Secretary, Communications |
| I. Melzer | A/Assistant Secretary, Regulatory |

¹ Resigned in January 1985

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National Energy Board



1985 Annual Report

National Energy Board Profile

The National Energy Board is a federal regulatory tribunal that was created by an Act of Parliament on 2 November 1959. During the past quarter-century, it has played an important role in the development of Canada's energy sector.

The Board's regulatory powers under the National Energy Board Act include the licensing of oil, gas, and electricity exports, the certification of interprovincial and international pipelines and international power lines, and the setting of tolls and tariffs for oil and gas pipelines under federal jurisdiction.

The Act also requires that the Board keep under review the Canadian supply of all major energy commodities, with emphasis on electricity, oil, and natural gas and their by-products, as well as the demand for Canadian energy in Canada and abroad.

The Board also has specific responsibilities under the Northern Pipeline Act and the Energy Administration Act.

Head Office:

National Energy Board
473 Albert Street
Ottawa, Ontario
K1A 0E5
(613) 993-6936

Regional Office:

National Energy Board
4500 - 16th Avenue N.W.
Calgary, Alberta
T3B 0M6
(403) 247-4233

National Energy Board

27 March 1986

The Honourable Pat Carney, P.C., M.P.
Minister of Energy, Mines and Resources
Ottawa, Ontario

Dear Miss Carney:

I am pleased to submit the Annual Report of the National Energy Board for the year ended 31 December 1985, in accordance with the provisions of Section 91 of the National Energy Board Act, the Revised Statutes of Canada, 1970, chapter N-6.

Yours sincerely,



R. Priddle,
Chairman

Metric Conversion Table

The National Energy Board uses the International System of Units (SI). The energy units most commonly referred to in this report are the gigajoule (GJ) and the petajoule (PJ). A 30-litre gasoline fill-up contains about one gigajoule of energy. A petajoule is one million gigajoules. A city the size of Toronto or Montreal uses a petajoule of energy for all uses (heat, light, transportation, etc.) about every 17 hours.

The following conversion table is provided for the convenience of readers who may be more familiar with the Imperial System.

Approximate Conversion Factor

| | |
|--|--|
| 1 metre (m) | = 3.28 feet |
| 1 kilometre (km) | = 0.62 mile |
| 1 millimetre (mm) | = 0.039 inch |
| 1 cubic metre (m^3) of oil | = 6.3 barrels |
| 1 cubic metre (m^3) of natural gas | = 35.3 cubic feet |
| 1 litre (L) | = 0.22 gallon |
| 1 kilogram (kg) | = 2.20 pounds |
| 1 gigajoule (GJ) | = 0.95 MMBtu, or 0.95 thousand cubic feet (Mcft) of natural gas at 1000 Btu/cf |
| 1 petajoule (PJ) | = 0.95 billion cubic feet of natural gas, or 165 000 barrels of oil, or 0.28 terawatt hours of electricity |

Abbreviations

| | |
|----------------------|----------------|
| gigajoule (GJ) | = 10^9 J |
| terajoule (TJ) | = 10^{12} J |
| petajoule (PJ) | = 10^{15} J |
| exajoule (EJ) | = 10^{18} J |
| kilowatt (KW) | = 10^3 watts |
| megawatt (MW) | = 10^3 KW |
| megawatt hour (MW.h) | = 10^3 KW.h |
| gigawatt hour (GW.h) | = 10^6 KW.h |
| terawatt hour (TW.h) | = 10^9 KW.h |

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National Energy Board
473 Albert Street
Ottawa, Canada
K1A 0E5
(613) 998-7204

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Office national de l'énergie
473, rue Albert
Ottawa (Canada)
K1A 0E5
(613) 998-7204

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The Chairman's Letter



On 9 January 1986 my predecessor, C. Geoffrey Edge, retired after fifteen years as a Board member, the last five as Chairman. He played a leading role in guiding the Board and advising the Government through challenging and difficult years. The tributes offered on his departure, by government and industry representatives in both Canada and the United States, testified to the important impact Geoff Edge had on the national and international energy scene during his career with the Board.

As the Board began its second quarter century in 1985, energy matters remained of major importance to Canada. During the year, the Government introduced several new energy policies which required changes to be made to regulatory regimes. The two most important, in terms of the Board's mandate and method of operations, were the removal of controls on the pricing and marketing of crude oil and petroleum products on 1 June 1985, and the *Agreement on Natural Gas Markets and Prices* which came into effect on 1 November 1985.

A number of changes to the Board's role and procedures resulted: oil export charges, administered by the Board, were eliminated; price and volume restrictions were removed on short-term oil exports; short-term exports of natural gas were effectively deregulated; and a fully market-oriented pricing system was introduced for all gas exports.

The Board quickly adapted its operating procedures to suit the objectives of these new policies and to avoid delays in processing oil and gas export applications. It also developed monitoring procedures to assess changing supply and demand situations and to keep the Government advised, while minimizing reporting requirements on industry.

The United States energy market is directly and indirectly of great importance for Canadian energy development. Our exporters again face strong competition: gas exporters from a continuing surplus of United States domestic supply; oil and oil products exporters from glutted world markets; all forms of energy from strong inter-fuel

competition. To these commercial pressures were added regulatory uncertainties which the Board endeavored to diminish both by formally presenting the Canadian view to American regulators and by informal inter-agency consultation.

Electricity exports grew in 1985. The Board approved long-term exports from Manitoba and Quebec. In this area, too, there are uncertainties resulting from regulatory and competitive actions in the United States. Again, the Board conveyed Canadian viewpoints to its American counterparts in various ways.

The completion and opening of the Norman Wells oil pipeline was the major pipeline construction activity during 1985. The Board played a key role at every stage of the planning and construction of this line and will monitor its operation. With the coming on stream of this line, the Board now has responsibility for the tolls and tariffs, and continuing safe and efficient operation of some 31 000 kilometres of pipelines in Canada.

The Board made internal organizational changes during 1985, to better cope with changes in the regulatory regime and to provide for effective coordination of staff work.

The activities documented in this report are testimony to the breadth and depth of the Board's involvement in the energy scene in 1985. The current year promises to be equally eventful. By early January 1986, major hearings were underway on gas export procedures, and on a review of TransCanada PipeLines' tolls in light of the *Agreement on Natural Gas Markets and Prices*. Hearings have been scheduled on Westcoast Transmission Company Limited's tolls and on a major expansion to Interprovincial Pipeline's system. An application has also been received for another major power export from Quebec. Indeed 1986 may exceed the level of 1985 in terms of the Board's hearing activity.

The National Energy Board is an organization of energy professionals and support staff dedicated to serving the public interest. It is responding promptly and effectively to the challenge of energy deregulation. The Board is determined to remain relevant and responsive to the new energy environment created by the Government's policy initiatives and by changing market circumstances.



R. Priddle
January 1986

Functions and Responsibilities



Responsibilities Under the National Energy Board Act

The Board has two principal responsibilities under the National Energy Board Act:

- to regulate specific matters concerning oil, gas and electricity in the public interest, and
- to advise the Government on the development and use of energy resources.

The Board has the power to hold inquiries into any aspect of energy matters under its jurisdiction and to issue reports for the use and information of Government, Parliament, and the general public.

The regulatory role of the Board is described below.

Regulation of Pipeline Traffic, Tolls, Tariffs, and Accounting Practices

The Board regulates the tolls and tariffs of pipeline companies under federal jurisdiction to ensure that the tolls are just and reasonable and that there is no unjust discrimination.

Export Licences and Orders

The Board issues long-term licences for the export of oil, gas, and electricity. Such licences are normally issued following public

hearings. In issuing export licences, the Board must satisfy itself that the quantities of energy exported do not exceed the surplus remaining after making allowance for reasonably foreseeable Canadian requirements. The Board also issues orders for short-term exports of these commodities, subject to the restrictions imposed in the National Energy Board Part VI Regulations. In addition, the Board authorizes licences and orders for imports of natural gas.

Certificates of Public Convenience and Necessity for Pipelines and Power Lines

The Board grants certificates to construct and operate interprovincial and international oil, gas, and petroleum products pipelines, as well as international and designated interprovincial electric power lines. Before a certificate is issued, the Board is required to hold a public hearing.

Detailed Routing - Pipelines and Power Lines

Persons whose lands may be affected by the route of a pipeline or power line approved by the Board can present their views to the Board at a local public hearing. Their evidence is considered in the determination of the final detailed route of the utility.

Pipeline and Power Line Orders

The Board approves minor pipeline facilities or minor additions to, or modifications of, existing pipeline systems without a public hearing. These approvals are restricted to pipelines not more than 40 kilometres long and installations such as tanks, pumps, compressors, and meter stations. The Board may also authorize, without a public hearing, the construction and operation of international power lines not exceeding 50 kilovolts.

Pipeline Safety

The Board's Oil and Gas Pipeline Regulations provide for the safe design, construction, and operation of pipelines under the Board's jurisdiction. To ensure high standards of pipeline construction and operation, the Board carries out inspection programs and conducts investigations of pipeline system performance.

Pipeline Utility Crossing Orders

To enhance public safety, the Board grants prior approval to utilities crossing a pipeline, thereby ensuring design compatibility and reducing the possibility of damage to the pipeline. It also establishes the conditions under which a pipeline may be constructed across an existing utility, thereby ensuring

the integrity of other utility services. Construction of a pipeline crossing navigable water or a railway requires permission of the Minister of Transport or the Canadian Transport Commission.

Environmental Protection

The Board considers the environmental implications of any proposal to build and operate an oil or gas pipeline or international power line, assessments being made primarily through public hearings and through auditing the company's inspection of construction and operation. This ensures that new projects will have minimal adverse effects on fish, wildlife, land-use, environmental health, and safety.

Socio-Economic Impact

The Board monitors socio-economic action plans of pipeline companies, conducts investigations, and reviews performance when warranted. It has issued guidelines for assessing the regional socio-economic impact of gas or oil pipeline projects.

Responsibilities Under the Energy Administration Act

Under the Energy Administration Act, the Board administers the selling price of natural gas from a producing province for use outside the province of production in domestic or export markets.

Responsibilities Under the Northern Pipeline Act

The Board's statutory responsibilities regarding the Canadian portion of the Alaska Natural Gas Transportation System relate mainly to financing, approval of pipe specifications, granting of leave to open orders, and

regulation of the operation of the line. However, the Board's activities under the Northern Pipeline Act will be negligible until the main project proceeds.

Public Access and Participation

The Board is a Court of Record. With specific exceptions relating to the confidentiality of competitive pricing information, the Board's deliberations are conducted on the basis of publicly filed, publicly available information. For major applications and inquiries, the Board holds public hearings at which applicants and interested persons have full rights of participation in the official language of their choice. To give parties an opportunity to discuss their concerns or questions, the Board provides advance notice of the hearings and allows time for parties to respond to requests for information.

In addition, the Board issues quarterly regulatory agendas on matters coming before the Board as well as information bulletins on a variety of matters pertaining to Board activities.

Implementation of Board Decisions

When the Board is prepared to grant a certificate for a pipeline or power line or to issue a licence for the export of natural gas or electricity, the import of natural gas, or the long-term export of oil, it so reports to the Governor in Council through the Minister of Energy, Mines and Resources. If a certificate is approved by the Governor in Council, the certificate is then issued by the Board. In the case of export or import applications, licences issued by the

Board go into effect on approval by the Governor in Council. A decision of the Board to refuse an application is not subject to referral to the Governor in Council. The Board's Reasons for Decision on applications are issued as public documents. The Board's decisions on tolls and tariffs are made without reference to the Governor in Council, as are the majority of the Board's day-to-day decisions.

Reviews and Appeals of Board Decisions

The Board may review, rescind, or change any of its orders or decisions, or re-hear any application before deciding on it. It may also change a previously-issued certificate or licence, but no such change is effective until approved by the Governor in Council. Parties may apply to the Board requesting that an order or decision be reviewed, or a licence or certificate amended.

A decision or order of the Board may be appealed to the Federal Court of Appeal, providing the appeal is based on a point of law or jurisdiction.

Awarding of Costs

The Board does not award costs to participants in its proceedings¹. However, in the case of detailed route hearings, the Board may establish the appropriate level of compensation to be paid to the landowner for costs associated with participation in the hearing.

¹ During 1985, the Board referred to the Federal Court of Appeal the question of the Board's authority to award costs in connection with its hearing on the location of a propane facility at Flamborough, Ontario, proposed to be built by Interprovincial Pipe Line Limited. It is expected that the matter will be argued before the Federal Court of Appeal in April 1986.

Organization



Members of the National Energy Board

Mr. R. Priddle assumed the duties of Chairman on 10 January 1986, upon the retirement of Mr. C.G. Edge. The membership of the Board as of 31 December 1985 follows:

| | |
|-------------------|-------------------------|
| C.G. Edge | Chairman |
| R.F. Brooks | Vice-Chairman |
| L.M. Thur | Associate Vice-Chairman |
| W.A. Scotland | Associate Vice-Chairman |
| A.D. Hunt | Associate Vice-Chairman |
| J. Farmer | Member |
| J.R. Jenkins | Member |
| J.R. Hardie | Member |
| J.L. Trudel | Member |
| R.B. Horner, Q.C. | Member |
| W.G. Stewart | Member |
| A.B. Gilmour | Temporary Member |

For part of 1985, Mr. E.S. Bell, Mr. J. Heath, and Mr. R. Laking served as Temporary Board Members.

Standing Panels

The Board assigns much of its non-hearing regulatory work to five Standing Panels, each composed of a quorum of three Board Members. In addition, certain Board Members and senior staff participate in committees that deal with issues of a broad regulatory nature or with matters affecting the internal management of the Board.

The Standing Panels refer to the Board as a whole any matters they feel may raise questions of general policy or warrant a public hearing. Except as noted below, Panels do not issue or amend certificates or licences, or decide matters requiring a public hearing.

Members of the Board's Standing Panels as of 31 December 1985, and their responsibilities, are given below. The composition of Standing Panels is changed at appropriate intervals to provide Members with an opportunity to become familiar with all aspects of the Board's work. The first-named member of each Panel is the Panel Chairman, the fourth is the Alternate Member. The Board's Chairman is an ex-officio member of all Panels and Committees.

Oil Panel

Issues export orders for crude oil and petroleum products; regulates matters of traffic and discrimination on oil pipelines; advises the Minister respecting oil-related energy matters in general; and monitors and reports on oil exports as required by the *Western Accord*.

W.A. Scotland
J. Farmer
J.R. Hardie
R.F. Brooks

Gas Panel

Exercises the powers of the Board on matters relating to natural gas, propane, butanes, and ethane, and on matters of traffic and discrimination in gas pipeline services; approves pricing and other gas export contract amendments, and, subject to Governor in Council approval, issues concordant amendments to gas export licences; issues short-term gas orders; and advises the Minister on all matters relating to gas export markets.

A.D. Hunt
R.B. Horner
A.B. Gilmour
R.F. Brooks

Electrical Panel

Exercises the Board's powers on all matters relating to electricity; issues electrical exemption and export orders; and advises the Minister on electricity matters.

L.M. Thur
J.R. Hardie
J.L. Trudel
J.R. Jenkins

Pipeline Panel

Exercises the powers of the Board in matters relating to the construction, operation, and maintenance of pipelines, including safety and environmental considerations.

J.R. Jenkins
R.B. Horner
A.B. Gilmour
A.D. Hunt

Financial Regulatory Panel

Exercises the powers of the Board with respect to tariffs and tolls charged by pipeline companies under the Board's jurisdiction.

W.G. Stewart
J. Farmer
J.L. Trudel
L.M. Thur

Committees

The Board's Committees review matters that relate to the Board's internal procedures and management. Committee members as of 31 December 1985 and their responsibilities are given below. The first-named member of each Committee is the Committee Chairman.

Executive Committee

Deals with broad, long-term issues affecting the Board.

C.G. Edge
R.F. Brooks
L.M. Thur
W.A. Scotland
A.D. Hunt
R. St. G. Stephens.

Internal Audit Committee

Initiates audits and reviews their results to the end that the Board's operations are administered efficiently, economically, and effectively.

C.G. Edge
R.F. Brooks
L.M. Thur
R. St. G. Stephens

Regulatory Process Committee

Studies and keeps under review all aspects of the regulatory process and recommends to the Board measures to improve the efficiency and effectiveness of regulation.

R.F. Brooks
L.M. Thur
J.S. Klenavic
S.K. Fraser

Staff

For the fiscal year 1985-86 the Board's budget was \$27.0 million with a person-year allocation of 466.

The Board's offices and branches are described below; the inside back cover of this report lists the Board's senior staff.

The Executive Director is the Board's senior staff member, with responsibilities that include the overall management of the Board, the acquisition and allocation of human and financial resources, and the efficiency and effectiveness of Board activities and operations.

The Finance Branch coordinates and administers the financial policies under which the Board operates and provides advice and services relating to financial activities.

The Personnel Branch provides advice and services in the areas of staffing, human resources planning, training, affirmative action programs for visible minorities, official languages, classification, staff relations, and pay and benefits.

The Director General, Energy Regulation is responsible for the integration of all staff activities involving the regulation of energy exports. This encompasses planning and coordinating all work affecting the regulation of exports of oil, gas, and electricity under Part VI of the National Energy Board Act, and coordinating the analysis of all matters related to energy demand, supply and surplus under Part II of the Act.

The Economics Branch advises the Board on economic and socio-economic matters and maintains an energy statistics unit. The Branch prepares projections of

energy demand in Canada and maintains surveillance of similar studies done for the United States. The Branch's responsibilities include analysis of the impact of proposed energy projects on the economy and socio-economic conditions of Canada and its regions. It also assesses the extent to which Canadians will have an opportunity to participate in projects.

The Energy Supply Branch is responsible for advising the Board on matters relating to oil and gas exploration, drilling, and production and forecasts trends in oil and gas supply from conventional, oil sands, synthetic, and frontier sources. The Branch independently calculates the reserves and deliverability of gas and the reserves and producibility of oil. The calculation of gas and oil reserves by pool is carried out in the Board's Calgary office.

The Electric Power Branch advises the Board on matters relating to electricity export licensing, international power line certification, and regulatory

advice to the Board on matters under federal jurisdiction that relate to the production, transportation, sale, and exchange of electricity.

The Gas Branch advises the Board on all regulatory activity related to natural gas and gas products, including the regulation of all matters relating to traffic and discrimination in gas pipeline services and the export of gas and gas products by orders and licences. The Branch also monitors and controls all matters associated with the Board's obligations for the administration of domestic gas pricing under the Energy Administration Act. The Branch maintains a statistics unit, which is responsible for the collection and dissemination of all operational data related to the consumption and transportation of gas and gas products. As well, the Branch is responsible for preparing short-term forecasts for domestic and export gas and gas products demand. In addition, it plays a supportive role in all other regulatory activity related to gas and gas products.

The Oil Branch provides advice on oil-related energy matters, including oil markets, transmission, processing, distribution, and the short-term balance of supply and demand for feedstocks and oil products. The Branch advises the Board on pipeline traffic matters and reviews the export prices of domestic crude oil and petroleum products and international oil prices.

The Director General, Pipeline Regulation integrates all staff activities relating to the regulation of gas, oil, and petroleum products pipelines. This encompasses the design, construction, operation,

During 1985-86, the Board's budget was \$27 million with a person-year allocation of 466.

surveillance. The Branch prepares supply and demand forecasts for electricity that are used in dealing with electrical and other applications, reviews the American market for electricity, and provides

safety, and environmental concerns specified under Part III of the National Energy Board Act and matters regarding traffic, tolls, and tariffs under Part IV of the Act.

The Environment and Right-of-Way Branch is responsible for providing advice to the Board with respect to assessing the protection of the environment and the acquisition of land for pipelines and international power lines. The Branch assesses submissions from affected landowners regarding the detailed route of those facilities, verifies the accuracy of right-of-way acquisitions, and evaluates the technical requirements related to third-party crossings of pipelines.

The Pipeline Engineering and Operations Branch advises the Board on matters relating to pipeline certificates issued under the National Energy Board Act and for the regulation of the safety of pipeline facilities under the Board's jurisdiction. The Branch is the Board's principal source of advice on technical matters included in

applications by pipeline companies for facilities construction and tolls.

The Financial Regulatory Branch has the primary responsibility for rates, tolls, and tariffs, financial advice, the audit of petroleum export charges, and costs of transportation under specific areas of the National Energy Board Act and the Energy Administration Act. It also audits the accounts of pipeline companies under the Board's jurisdiction and monitors the financial performance of pipelines.

The Law Branch provides legal advice to the Board on all matters relating to the Board's powers and responsibilities, acts as Counsel for the Board at public hearings, and represents the Board in proceedings before the Federal and Supreme Courts of Canada.

The Office of the Secretary receives all applications and submissions and coordinates their consideration by the Board. It advises the Board on the scheduling of hearings, and makes

all administrative arrangements for public hearings in Ottawa and across Canada.

In addition, it provides media and public relations services, publications services, property and materiel management, records management services, and operates the Board's library. It administers the Access to Information and Privacy Acts and coordinates translation services with the in-house translation unit provided by Secretary of State.

The Information Technology Branch is responsible for computer systems services, word processing support, and data processing support. This includes consultative service on computer operations, data management, program design and development, and an advisory service on the latest data processing techniques and applications. Branch responsibilities also include the integration of information and processing systems and services for the Board.

Review of Energy Developments



Overview

World energy markets continued to be characterized by excess supply in 1985. Producers of crude oil and petroleum products competed for shares of a declining market.

Natural gas availability exceeded demand, and electricity was in ample supply.

International Oil Prices

The excess world supply of oil resulted in a sharp decline in international oil prices during the closing months of 1985. The Organization of Petroleum Exporting Countries (OPEC) found its share of the world's oil market continuing to diminish. Cash flow requirements led several members to virtually abandon pre-determined production quotas and to offer discounts from official prices. By the end of 1985, OPEC had decided to shift from a policy of setting world oil prices to one of defending its share of oil production. World oil traders have reacted to intensified price competition by increased reliance on short-term contracts and spot markets, and by minimizing crude oil and product inventories.

Developments in world markets caused the average cost in U.S. dollars of imported crude oil at Montreal to decline by 3.5 percent

relative to the 1984 level. However, the price paid in Canadian dollars for imported crude increased by two percent in 1985, reflecting the continued depreciation of the Canadian dollar. At year end, there was widespread anticipation of a further decline in the international price of oil.

Gas Export Prices

The decline in world oil prices has influenced the prices of competing fuels in markets throughout the world. In North America, the natural gas industry has been subjected to the pressure of declining oil prices, gas supply in excess of demand, and changes in government policy.

The U.S. Federal Energy Regulatory Commission (FERC) undertook several initiatives during 1985 to open American gas markets to more direct competition. To date, these policy changes have resulted in significant market shifts stemming from the static American gas market and the continuing surplus of supply. Notably, spot sales have grown rapidly and now account for some 30 to 35 percent of the American interstate market. Spot prices for gas fell throughout 1985, reaching approximately \$U.S. 2.00 per thousand cubic feet at year-end and

putting increasing pressure on longer-term contract prices for gas. The extent to which spot markets will expand depends on the outcome of the FERC policy initiatives and the reaction of the natural gas industry to adopted policies.

In the early 1980's, the excess of natural gas supply and increasing competition in American natural gas markets eroded Canada's historical five percent share of American markets. Since November 1984, Canadian natural gas export pricing policy has allowed exporters of natural gas to the United States to negotiate export prices, subject to certain government guidelines. This has resulted in a recovery of our share of the American market. However, the increase in gas export volumes was offset by lower export prices, resulting in relatively constant export revenues.

Canadian Energy Policy

Market-responsive gas export pricing was the first of several recent initiatives in Canadian energy policy. In March 1985, the *Western Accord* proclaimed an end to administered oil pricing in Canada, reduced taxation on the petroleum industry, and effectively eliminated controls on crude oil and petroleum product exports

starting 1 June 1985. In late October 1985, the Minister of Energy, Mines and Resources announced that an agreement on natural gas pricing for domestic sales had been reached with the provinces of British Columbia, Alberta, and Saskatchewan. The *Agreement on Natural Gas Markets and Prices*, which became effective on 1 November 1985, will move Canada from a government-administered pricing system to a market-oriented pricing regime in order to foster a competitive market environment. The agreement provides for:

- direct sales at prices and terms freely negotiated between producers and distributors or large industrial users, provided transportation service is available in the consuming provinces;
- competitive marketing programs, allowing distributors to offer discounts in the competitive markets;
- a comprehensive review of the role and operations of interprovincial and international pipelines;
- access to the eastern Canadian market for gas produced in British Columbia and Saskatchewan; and
- a review by the National Energy Board of access to transportation services on TransCanada PipeLine's system with regard to availability, duplication of demand charges, displacement of sales, and take or pay charges.

Effective 1 November 1986, prices for all natural gas entering interprovincial trade will be determined by negotiation between

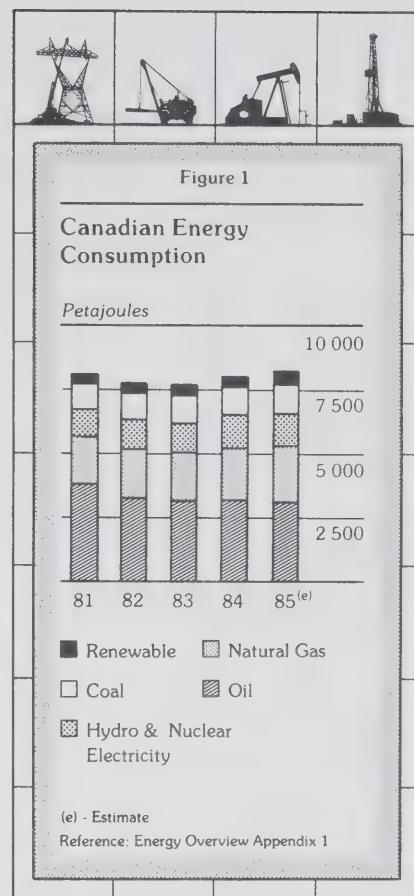
buyers and sellers. In the twelve-month transition period to the market-oriented system commencing 1 November 1985, the price of gas at the Alberta border for existing contracts was frozen at \$2.79804 per gigajoule. In the same period, the Government of Canada agreed to subsidize transportation services on the TransCanada system under a Transportation Assistance Program financed by an extension of the Market Development Incentive Program in order to keep wholesale prices east of Alberta at their current levels.

Oil and gas producers benefited from the tax changes in the *Western Accord* and from adjustments in provincial royalties during 1985. A new fiscal regime to replace Petroleum Incentive Payments was also announced for frontier areas, along with a new, competitive system for the issuance of frontier exploration rights.

Energy Production, Consumption, and Trade

During 1985, Canadian energy production increased in line with the growth in the domestic market and in export demand for Canadian energy. Consumption in Canada increased by two percent as a result of a colder-than-average winter, relatively steady energy prices, and strong economic growth. Economic growth in 1985 resulted from a long-awaited recovery in business fixed investment, together with gains in the household demand for residential construction and consumer durables. Natural gas consumption increased by six percent, while oil consumption declined slightly. Total electricity use rose by four percent.

Energy exports increased strongly in 1985.



Total petroleum export volumes were up by 31 percent, electricity exports by 10 percent and natural gas by 22 percent. Total energy equivalent exports of oil, gas, and electricity increased by 27 percent over 1984 for a total value exceeding \$14 billion. The dollar surplus in energy trade increased some 24 percent, for a positive balance approaching \$10 billion.

Crude Oil and Petroleum Products

The Canadian petroleum industry faced major policy changes with the signing of the *Western Accord*. The key elements of this agreement between the federal government and the producing provinces were the elimination of administered prices for crude oil, restrictive controls and charges on crude oil and petroleum product exports,

Table 1
Canadian Trade Balance
in Petroleum, Gas, and Electricity
(Petajoules and Billions of Dollars)

| | 1983 | | 1984 | | 1985(e) | |
|------------------------------|--------------|-------------|--------------|-------------|--------------|------------|
| | PJ | \$ Billions | PJ | \$ Billions | PJ | \$Billions |
| Exports | | | | | | |
| Petroleum ^(a) | 1 051 | 5.9 | 1 177 | 6.8 | 1 547 | 9.0 |
| Natural Gas | 771 | 3.9 | 809 | 3.9 | 990 | 4.1 |
| Electricity ^(b) | 133 | 1.2 | 135 | 1.4 | 149 | 1.4 |
| Total | 1 955 | 11.0 | 2 121 | 12.1 | 2 686 | 14.5 |
| Imports^(c) | | | | | | |
| Petroleum ^(a) | 614 | 3.6 | 702 | 4.3 | 770 | 4.8 |
| Net Export - Total | 1 341 | 7.4 | 1 419 | 7.8 | 1 916 | 9.7 |

(e) estimate

(a) Includes petroleum products.

Excludes exchanges between Canada and the United States.

(b) Electricity is converted at 3.6 petajoules per terawatt hour on the basis of the energy content of the electricity output.

Excludes exchanges between Canada and the United States.

(c) Import quantities of natural gas and electricity were negligible.

and controls on imports of heavy fuel oil. These changes in pricing and regulatory policy became effective 1 June 1985.

The policy changes did not immediately result in large shifts in the domestic disposition of Canadian crude oil, although deliveries to the Atlantic region were almost entirely ended when the subsidy for those movements ceased. Canadian crude oil prices were also quite stable over the year, with the average Toronto refinery gate price of oil increasing by approximately three percent over 1984. The fall in international oil prices at the end of 1985 caused reductions in Canadian crude oil prices beginning in December 1985. Major price reductions occurred early in 1986 as Canadian

oil prices followed the rapid decline in international oil prices.

Supply and Domestic Demand

Refinery crude oil runs during the year decreased by 1.5 percent, reflecting a decline in demand and product inventory reductions. Regionally, demand for gasoline, middle distillates, and heavy fuel oil fell 4.2 percent in Eastern Canada and increased by 0.4 percent west of Ontario. Demand for motor gasoline reflected the continuing improvements in the efficiency of the motor vehicle stock, while the substitution of alternative fuels reduced the demand for light and heavy fuel oil. Since 1 June 1985, purchases of domestic crude oil by Canadian refineries decreased by eight percent from 1984, while imports increased.

During 1985, Canadian production of light crude oil declined by some 5 200 cubic metres per day to 168 300 cubic metres per day due to market demand constraints. In Alberta, as a result, an average of 9 900 cubic metres per day of productive capacity for light crude oil was shut-in during 1985, compared to 1 000 cubic metres per day in 1984. Production of synthetic crude oil increased by 5 500 cubic metres per day in 1985 to 26 600 cubic metres per day, while the production of heavy crude oil increased by 7 000 cubic metres per day to 55 700 cubic metres per day, principally due to increased bitumen production.

In total, crude oil and equivalent production increased by 2.9 percent, from 243 500 cubic metres per day in 1984 to an estimated 250 600 cubic metres per day in 1985.

Exports

Continually rising production and relatively flat Canadian demand for heavy crude oil resulted in record levels of heavy crude oils, averaging approximately 41 900 cubic metres per day, being exported to the U.S. Midwest. Exports of light crude oil to the United States also increased substantially to some 33 400 cubic metres per day. Crude oil exchange arrangements between Canadian and American refiners continued in 1985.

Exports of refined petroleum products were particularly strong in the first half of 1985, when the Board was responsible for the licensing of petroleum product exports. During this period, the Board encouraged the exportation of high-valued, refined products in order to minimize the level of shut-in crude oil productive

capacity. Petroleum product exports in the last half of 1985 were slightly below 1984 levels. Refined product exports averaged approximately 21 000 cubic metres per day over the year, an increase of 10 percent over 1984.

The total volume of crude oil and petroleum product exports increased by approximately 31 percent over 1984, while export revenues are estimated to have grown by a similar percentage.

Pipeline Capacity

The increased production of crude oil, especially the increase in heavy grades, caused pipeline operators to consider expanding the capacity of their pipeline systems in 1985. Interprovincial Pipe Line Limited operated at full capacity for most of the year and was required to

apportion space in two months of 1985. An expansion of Interprovincial's system has been approved by the Board and is proceeding.

The price of natural gas in Canada was steady throughout the year; however, the price relationship of gas to oil in the Toronto reference market declined from 63 percent to 61 percent as a result of the slight rise in the refinery acquisition prices of crude oil.

Despite the increase in domestic and export demand, the excess of productive capacity relative to demand remained as a problem for gas producers throughout the year.

Exports

During 1985, the first full year of gas export sales under the policy of negotiated gas export pricing, gas export volumes were up by 22 percent from 1984, while export prices declined on average by 16 percent to \$4.06 per gigajoule. Total gas export

The total volume of crude oil and petroleum product exports increased by approximately 31 percent over 1984.

A notable extension to the national pipeline system in 1985 was the completion of Interprovincial's Norman Wells Pipeline, which transports oil from the Norman Wells field in the Northwest Territories to Alberta.

Imperial Oil Ltd. completed its pipeline connection between Edmonton and the Rangeland pipeline system to improve export market access for the increasing production of Cold Lake heavy crude oil.

Natural Gas

Supply and Domestic Demand

In 1985, net sales of natural gas in Canada rose by five percent. This strong increase in demand resulted from market expansion, primarily in the province of Quebec, and increasing activity in the industrial sector of the market, which accounts for half of all gas sales. Colder-than-average weather conditions also contributed to the increase.

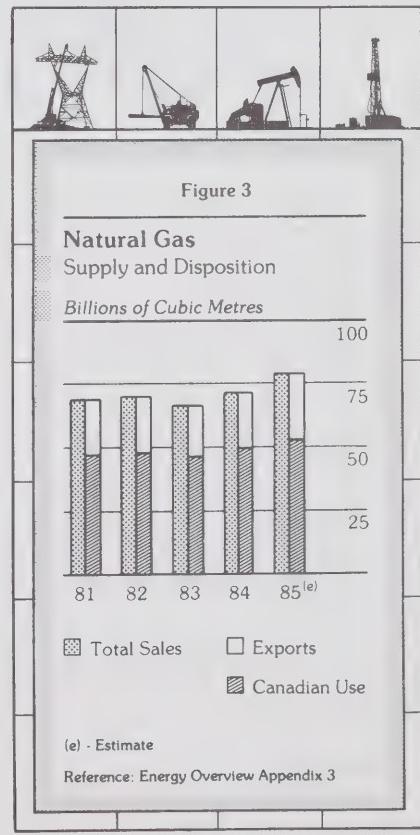
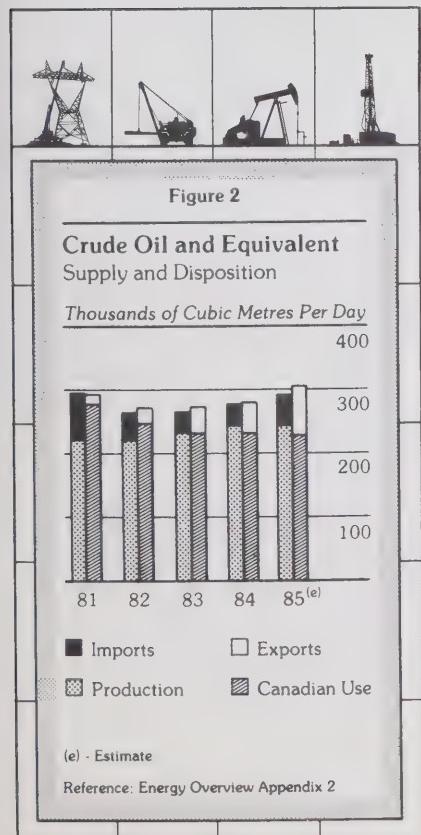
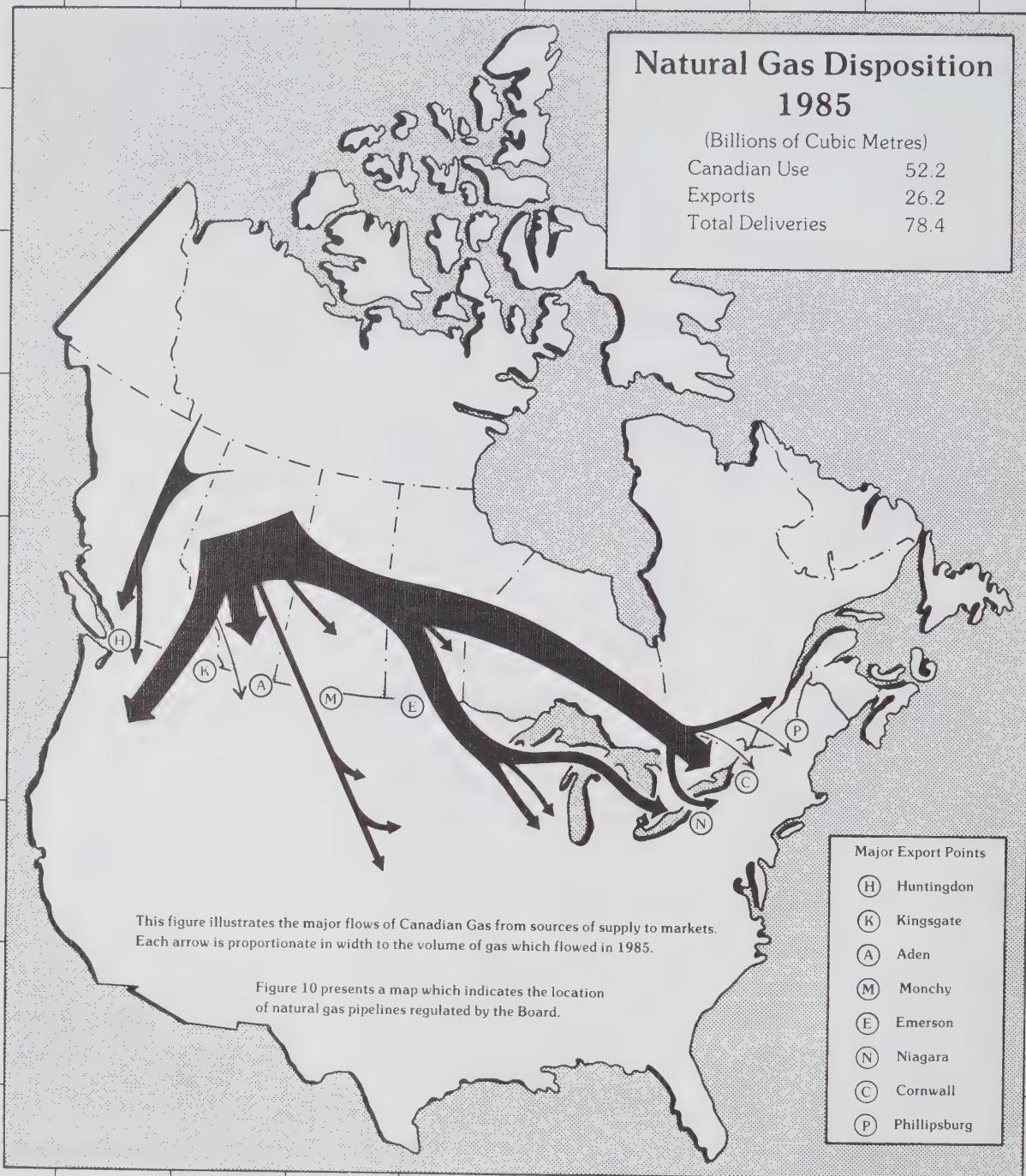


Figure 4



revenues remained at about \$4 billion. In 1985 actual exports represented about 56 percent of quantities authorized for export by the Board.

American markets for Canadian natural gas can be described in three groupings: the California/Northwest market, the Midwest market and the Mid-Atlantic market. Exports were strong to the California/Northwest market area, totalling 14 400 million cubic metres, which represents 55 percent of the total quantity of gas exported, and, in turn, was an increase of 36 percent over exports to this market area during 1984. Exports to the U.S. Midwest, where inter-fuel

approved subsequent to the 1 November 1985 relaxation of gas export regulations.

Natural Gas Liquids

Total net Canadian production of propane and butanes in 1985 was 7.3 and 4.5 million cubic metres, respectively, very similar to the 1984 levels. Ethane production amounted to 6.2 million cubic metres. Canadian domestic requirements grew slightly in 1985, led by the use of natural gas liquids in enhanced oil recovery projects and by the petrochemical industry. Export quantities of propane, butanes, and ethane amounted to 2.9, 2.5, and 1.6 million cubic metres respectively, a reduction from 1984 levels. The regulation of propane and butanes exports was relaxed in 1985 to remove quantity and minimum price restrictions.

Electricity

Generating Capacity

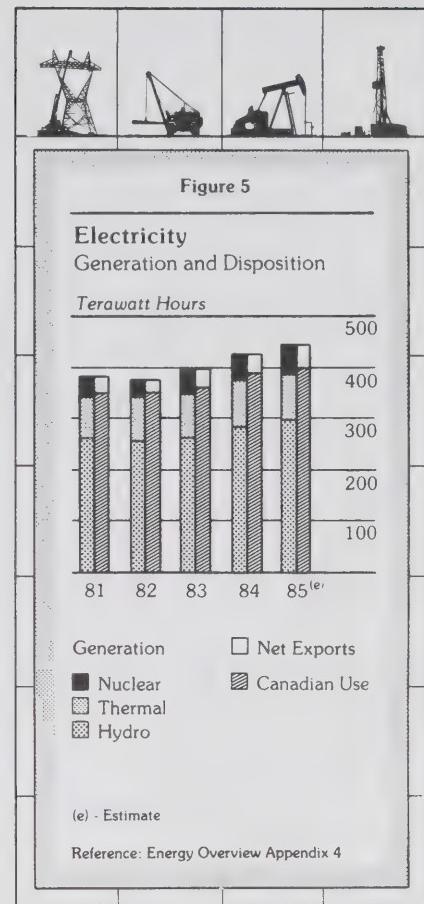
In 1985, Canada's total net installed electrical capacity was approximately 89 700 megawatts, an increase of six percent over 1984. Generating capacity added in 1985, including new hydro in Quebec, Saskatchewan, and British Columbia and new nuclear units in Ontario, amounted to approximately 4 800 megawatts.

Generation and Consumption

Total generation of electricity in 1985 is estimated to be 445 000 gigawatt hours, up about 5 percent over 1984. Approximately 67 percent of this was supplied from hydroelectric generation, 20 percent from conventional thermal generation and 13 percent from nuclear generation. Total Canadian consumption in 1985 is estimated to be 404 000 gigawatt hours, an increase of 4 percent over 1984.

competition is particularly severe, were 10 500 million cubic metres. This represents 40 percent of total export volumes and was up 6 percent over 1984. The U.S. Mid-Atlantic exports make up the remaining five percent of gas exported from Canada. They increased 59 percent over 1984.

In 1985 the Board approved 28 short-term gas export orders. The majority of these orders relate to exports to the California/Northwest market area. Eighteen of the short-term export orders were



New Transmission Facilities

A number of international transmission facilities were completed, following review and approval by the Board. The New Brunswick Electric Power Commission upgraded the capacity of its 345-kilovolt interconnection with the New England states by 100 megawatts. Hydro-Québec built a second 120-kilovolt transmission line to Vermont which has been in service since September 1985. Ontario Hydro completed a 345-kilovolt line at Niagara to increase the capacity of its interconnection with the New York Power Authority.

New interprovincial transmission facilities not regulated by the Board were also completed during the year. These include a 500-kilovolt

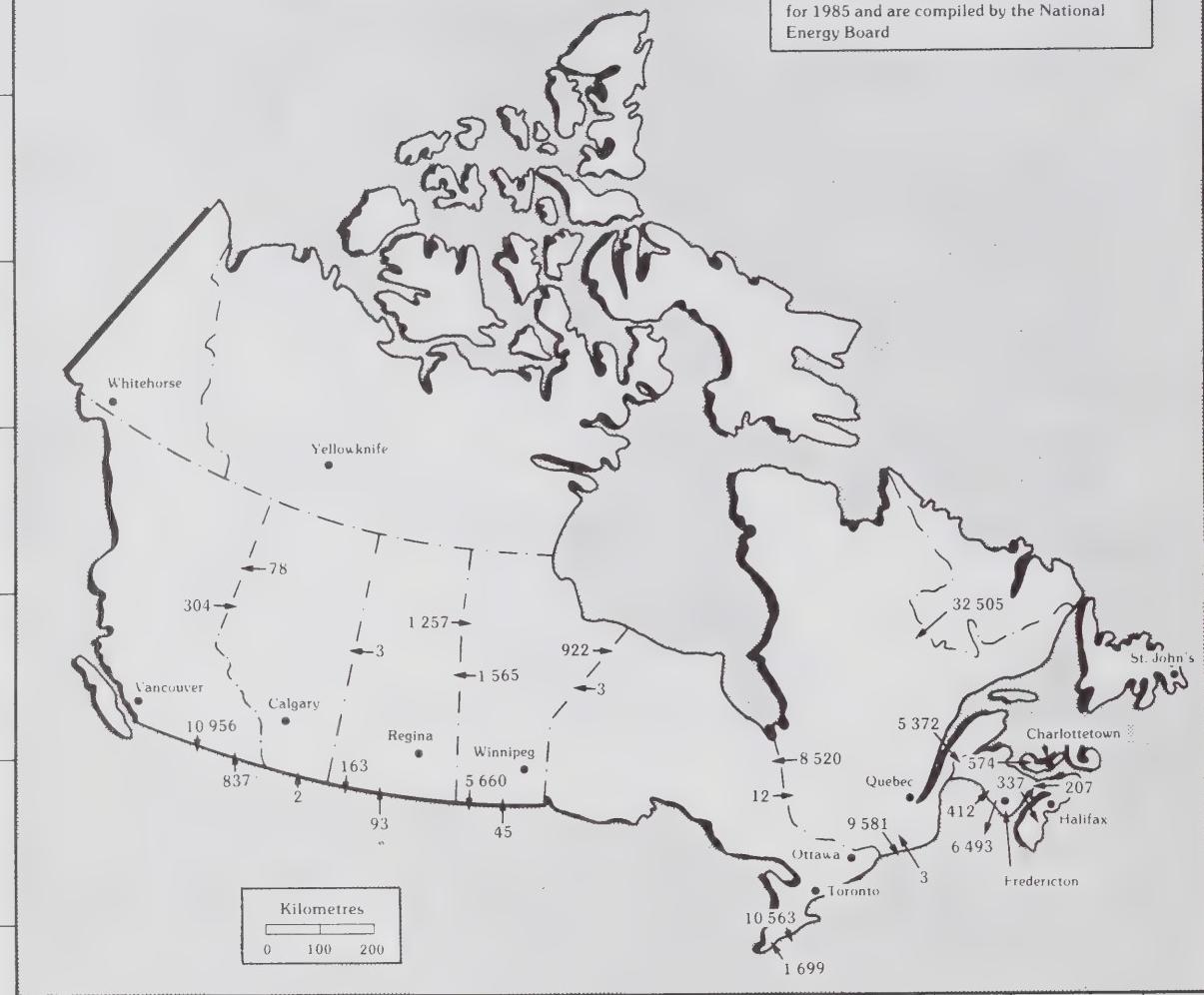
Figure 6



International and Interprovincial Transfers of Electricity (Gigawatt Hours)

Note:
Data for interprovincial transfers of electricity
are from 1 November 1984 to 31 October 1985
and are compiled from "Statistics Canada:
Electric Power Statistics Monthly."

Data for United States imports and exports are for 1985 and are compiled by the National Energy Board



line between Alberta and British Columbia and a new direct current interconnection, composed of a converter station and one 345-kilovolt line, between Quebec and New Brunswick.

These new transmission facilities could ultimately permit the export of additional Canadian energy.

Mutual Assistance

Interconnections play a major role in modern power systems. Most Canadian utilities have both north-south and east-west lines that allow exchanges of power and energy and mutual assistance. One example of the benefits derived from cooperative action occurred in May when Ontario Hydro's nuclear plants were shut down and the utility obtained energy and reserve capacity from neighbouring systems in Canada and the United States.

In another instance, when the east coast of the United States was struck by Hurricane Gloria in September, Hydro-Québec and Ontario Hydro sent line crews to assist in re-establishing service to customers in the State of New York and in the New England States.

Export Sales

In 1985, total export sales of electricity amounted to 41 520 gigawatt hours, representing an increase of 10 percent over the previous year, with associated revenue up by 4 percent to \$1.4 billion. This modest increase in revenue resulted mainly from a decrease in the average export price due to the lower production cost of oil, gas, and coal-generated electricity displaced in the American market.

The British Columbia utilities increased their export sales substantially in 1985. The Bonneville Power Administration, which usually supplies much of the U.S. west coast market, including some of California's needs, experienced low water levels throughout the year. At the same time, British Columbia exporters enjoyed good water conditions and were thus able to supply the demand for interruptible energy in the American market. As a result, the total exports from that province more than doubled from 1984.

In 1985, British Columbia Hydro and Power Authority adopted a new export market strategy following the provincial government's announced policy of pursuing export power sales in order to facilitate the construction of generating power plants.

Oil and Gas Exploration and Reserves

Exploration and Drilling Activity

The Canadian petroleum industry set a new drilling record in 1985. During the year, approximately 11 515 wells, including 44 offshore wells, were drilled throughout Canada, an 18 percent increase over 1984. As in the previous four years, drilling activity in the western provinces was directed principally towards oil rather than gas discovery. A regional breakdown of drilling activity is shown in Table 2.

Factors underlying the increase in drilling activity included:

- the favourable environment for new investment created by the *Western Accord*;

Table 2

Drilling Activity by Area (Number of Wells Drilled)

| | 1984 (a) | 1985 (e) |
|---|--------------|---------------|
| British Columbia | 194 | 215 |
| Alberta | 6 043 | 7 075 |
| Saskatchewan | 2 963 | 3 770 |
| Manitoba | 246 | 245 |
| Ontario and Other Eastern Producing Provinces | 199 | 106 |
| Territories and Arctic Islands (Includes Beaufort Sea and Mackenzie Delta) | 96 | 76 |
| East Coast Offshore | 22 | 28 |
| Total for Canada | 9 763 | 11 515 |

(a) - Canadian Petroleum Association data

(e) - estimate

- the phasing-out of the Petroleum and Gas Revenue Tax and the provision of royalty tax credits;
- the introduction and extension of royalty "holidays" for new oil wells and reduced royalties; and
- accelerated activity in heavy oil projects and continued strong export demand for heavy oil.

Geophysical activity during 1985 was up about five percent from 1984, reflecting the industry's continued pursuit of new hydrocarbon prospects throughout Canada.

British Columbia

The level of drilling activity in British Columbia was relatively unchanged from 1984. Of particular interest was the drilling of two wells in the Flathead and Kootenay Pass regions of southeastern British Columbia to

locate accumulations of carbon dioxide for use in enhanced oil recovery projects. Tests indicated natural gas containing over 75 percent carbon dioxide. Most drilling in the northeastern part of the province was directed towards the search for oil.

Alberta

Alberta recorded the largest increase in total wells drilled, with some 7 075 completions. Much of the activity was concentrated in and adjacent to areas of known oil reserves, where new small- and medium sized oil accumulations made significant contributions to the province's oil reserves and production.

Important centres of activity were northwestern Alberta, where drilling was directed in large measure towards the search for oil in Devonian reefs, and the east-central part of the province where the main objective was the

development of bitumen and conventional heavy oil deposits. In southern Alberta, there was extensive drilling for both heavy oil and shallow gas.

Saskatchewan

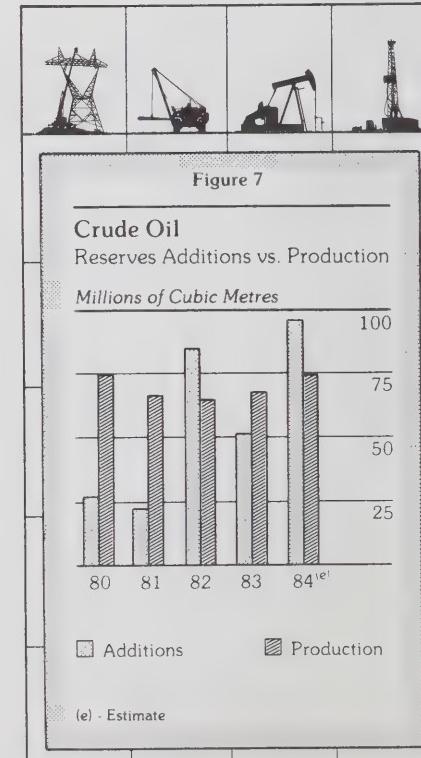
A new drilling record was established in Saskatchewan for the third consecutive year. A total of 3 770 wells were drilled, an increase of 27 percent over 1984. As in previous years, drilling was concentrated in the west-central part of the province for heavy gravity oil; however, there was a significant increase in drilling activity in southeastern Saskatchewan's light oil producing areas. In southwestern Saskatchewan, shallow gas development continued.

Manitoba

245 wells were drilled in Manitoba, about the same number as in the

Table 3
Estimated Established Reserves
of Conventional Crude Oil
at 31 December 1984
(Millions of Cubic Metres)

| | Initial | Remaining |
|-------------------------|----------------|--------------|
| British Columbia | 79.3 | 18.6 |
| Alberta | 1 985.5 | 566.4 |
| Saskatchewan | 421.2 | 110.1 |
| Manitoba | 32.8 | 9.6 |
| Northwest Territories | 39.9 | 35.2 |
| Ontario | 10.1 | 0.8 |
| Total for Canada | 2 568.8 | 740.7 |



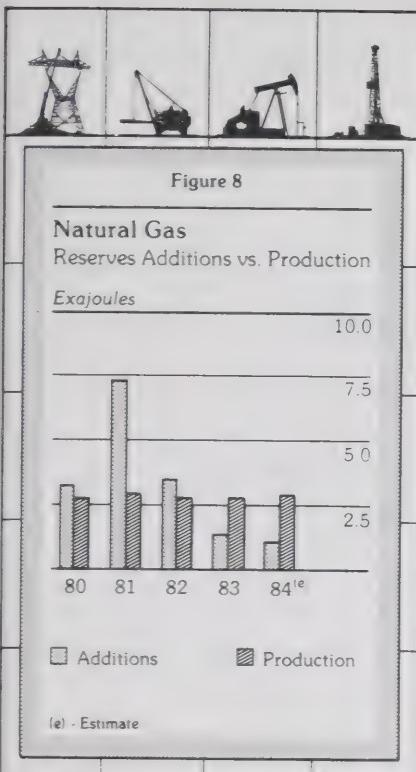


Table 4

**Estimated Established Reserves
of Marketable Natural Gas
at 31 December 1984**

(Exajoules)

| | Initial | Remaining |
|---|--------------|-------------|
| British Columbia | 15.9 | 9.3 |
| Alberta | 111.6 | 66.5 |
| Saskatchewan | 3.1 | 1.9 |
| Southern Yukon and Northwest Territories | 0.6 | 0.4 |
| Ontario and Other Eastern Producing Areas | 1.3 | 0.5 |
| Total | 132.5 | 78.6 |
| Mackenzie Delta | 5.6 | 5.6 |
| Arctic Islands | 12.0 | 12.0 |
| Total for Canada | 150.1 | 96.2 |

previous year. Drilling activity was directed towards the development of oil reserves in the southwestern part of the province.

Frontiers

In 1985, 106 wells were completed in Canada's frontier areas. Of these, 44 wells were completed in the offshore areas of the Mackenzie Delta-Beaufort Sea, Arctic Islands and East Coast, as well as Hudson Bay. The remaining 62 wells were located primarily on the Northwest Territories mainland. Thirty-five of these were drilled in the Norman Wells oil field in connection with a

waterflood program to enhance oil recovery.

Oil and Gas Reserves

The Board's estimate of remaining established reserves of conventional crude oil as of 31 December 1984 is 740.7 million cubic metres, 21.7 million cubic metres greater than the 31 December 1983 estimate.

Initial established reserves of conventional crude oil increased 97.6 million cubic metres. Increases of 77.8, 21.3 and 0.3 million cubic metres were recorded in Alberta, Saskatchewan, and Manitoba,

respectively. A decrease of 1.8 million cubic metres was experienced in British Columbia.

The Board's estimate of remaining established reserves of marketable natural gas in the conventional producing areas as of 31 December 1984 is 78.6 exajoules, 1.4 exajoules lower than the December 1983 estimate.

Initial established reserves of natural gas increased 1.2 exajoules, reflecting increases of 1.1 and 0.2 exajoules in Alberta and Saskatchewan, respectively, and a decrease of 0.1 exajoules in British Columbia.

Review of Board Activities



Public Hearings and Inquiries

During 1985, the Board conducted all or part of 18 hearings and inquiries in locations from Calgary, Alberta to Sherbrooke, Quebec, and in northern Canada, for a total of 166 hearing days.

The following summarizes the major decisions issued following public hearings and provides information on other applications before the Board during 1985.

Electric Power Exports

Maritime Electric Company Limited and New Brunswick Electric Power Commission

In 1982, the New Brunswick Electric Power Commission (N.B. Power) had been granted three licences to export electricity to four power companies in Maine.

A condition in each licence required N.B. Power to first offer the energy it intended to export to "economically-accessible Canadian markets on terms not less favorable to a Canadian purchaser..... than the terms on which the export would be made."

N.B. Power made an offer of the power to the Maritime Electric Company Limited (MECL) of Prince Edward Island. The offer,

which was based on N.B. Power's interpretation of the condition, was not satisfactory to MECL.

In March 1984, MECL applied to the Board for orders requiring that N.B. Power comply with the condition and offer the energy to MECL at a price no higher than the export price. N.B. Power filed a cross-application disputing MECL's interpretation of the licence condition, and requesting, if necessary, an amendment to the licence conditions to clarify the price to be charged interconnected Canadian utilities.

A public hearing on these applications took place in the summer and fall of 1984. In February 1985, the Board issued its Reasons for Decision approving MECL's application and dismissing N.B. Power's.

Hydro-Québec (Vermont)

In October 1984, the Board held a public hearing in Montreal on an application by Hydro-Québec for licences to export power and energy to the State of Vermont and for a certificate of public convenience and necessity to construct a 120-kilovolt international power line to deliver part of these exports.

In January 1985, the Board approved two licences to be issued

to Hydro-Québec. One licence authorizes the export of up to 150 megawatts of power and 1 314 gigawatt hours of energy per year for 10 years; the other permits the export of up to 200 megawatts of interruptible power per year and 1 752 gigawatt hours of energy per year for a period of 10 years and 6 months, less any exports made under the firm licence. The Board also approved the related power line.

The Manitoba Hydro-Electric Board

In November 1984, the Board held a public hearing in Winnipeg on an application by the Manitoba Hydro-Electric Board for a licence to export firm power and energy to Northern States Power Company, which provides power to the north-central United States.

In March 1985, the Board issued its Reasons for Decision approving a twelve-year licence to Manitoba Hydro. The licence allows the export of up to 500 megawatts of firm power and up to 3 405 gigawatt hours of energy annually.

Hydro-Québec (Citizens Utilities)

In December 1985, following a public hearing in Montreal in September, the Board issued its Reasons for Decision on an application by Hydro-Québec for

licences to export power and energy to Citizens Utilities Company in Vermont.

The Board issued three licences authorizing the export of power and energy over a five-year period. The licences permit the export of up to 100 megawatts of power and 657 gigawatts hours of energy each year.

Hydro-Québec (NEPOOL II)

In December the Board received an application from Hydro-Québec for a licence to export 70 terawatt hours (70 billion kilowatt hours) of electrical energy over a 10-year period commencing in 1990 to the New England Power Pool (NEPOOL).

The Board intends to hold a hearing on this application in 1986.

Electric Power - Detailed Route Hearings

Hydro-Québec (NEPOOL I)

In April 1985, the Board held a public hearing in Sherbrooke, Quebec, to consider the views of 26 landowners who had concerns about the detailed route of an international power line to be constructed by Hydro-Québec in the Eastern Townships. The power line, authorized by the Board in November 1984, would be used by Hydro-Québec to export electricity to the New England Power Pool.

In June 1985, the Board issued its Reasons for Decision approving all but two sections of the proposed detailed route. In October 1985, Hydro-Québec filed an application for approval of a modified route for the two remaining sections. In December, objections were received from some landowners on the revised route, but these objections were subsequently

withdrawn. The Board will decide on the two remaining sections early in 1986.

Hydro-Québec (Vermont)

In July 1985, following a public hearing held in June in St-Jean-sur-Richelieu, Quebec, the Board issued its Reasons for Decision approving the detailed route of a 120-kilovolt international power line to be built by Hydro-Québec from Bedford, Quebec, to the Vermont border. As mentioned earlier in this chapter, construction of the power line was approved by the Board in January 1985.

Tolls and Tariffs

Trans Mountain Pipe Line Company Ltd. (Gulf Canada Limited)

In December 1984, the Board had issued Order No. MO-56-84 directing Trans Mountain Pipe Line Company Ltd. to receive, transport, and deliver, via its pipeline from Edmonton to Kamloops, certain volumes of oil products offered for transmission by Gulf Canada.

In January 1985, the Board held a public hearing on an application by Trans Mountain for:

- a review of and a change to Order No. MO-56-84 and for authority to construct certain modifications to its pipeline at the Kamloops pumping station; and
- new tolls to be charged by Trans Mountain as of 1 January 1985 for transporting crude oil and products.

In January 1985, the Board amended Order No. MO-56-84 and authorized the construction of the requested pipeline modifications.

In April 1985, the Board issued its Reasons for Decision and approved new tolls to be charged by Trans Mountain as of 1 May 1985.

Trans-Northern Pipelines Inc. - Tolls

In April 1985, the Board held a public hearing on an application by Trans-Northern Pipelines Inc. for new tolls to be charged for the transportation of refined petroleum products in Ontario and Quebec. In June the Board issued its Reasons for Decision authorizing new tolls effective 1 July 1985.

The Board allowed the company an overall rate of return of 14.46 percent on a rate base of \$38.36 million. This rate included a rate of return on common equity of 15.75 percent.

Trans Québec & Maritimes Pipeline Inc. - Tolls

In August 1985, the Board announced its decision approving new tolls that Trans Québec & Maritimes Pipeline Inc. may charge for the transportation of natural gas in its pipeline system in Quebec.

While no public hearing of this application was held, the Board requested written submissions as a means of obtaining the views of interested parties.

The Board set a monthly toll of \$7.2 million, approximately one-twelfth of a projected cost of service of \$86.588 million. The authorized rate of return was 13.2 percent on a rate base of \$428.5 million.

The Board's Reasons for Decision were issued in September 1985.

Westcoast Transmission Company Limited - Method of Toll Regulation

Following a public hearing held in Vancouver during November 1984 and in Ottawa during January

1985, the Board in May issued its Reasons for Decision on the method of regulating the tolls which Westcoast Transmission Company Limited may charge for natural gas gathering, processing, and transportation services.

The Board decided that, as of 1 January 1986, it would regulate Westcoast's tolls on a fixed rather than variable toll basis.

Westcoast Transmission Company Limited - Tolls

In December 1985, Westcoast filed an application for tolls which it may charge as of 1 January 1986. In December, the Board issued an order allowing Westcoast to charge interim tolls starting 1 January 1986 until such time as the Board issues its decision on the application.

The Board expects to hear the application in March 1986.

TransCanada PipeLines Limited - Method of Toll Regulation

In October and November 1984 and in February 1985, the Board held a public hearing in Hull and Ottawa to examine the method of regulating the tolls which TransCanada PipeLines Limited may charge for transporting natural gas to Canadian and American markets.

In February, the Board decided to adjourn the review until such issues as gas pricing and marketing had been clarified. With the signing of the *Agreement on Natural Gas Markets and Prices* on 31 October 1985, and with many of the issues being discussed in the Board's January 1986 hearing on the availability of services on the TransCanada pipeline, it is unlikely the hearing on TransCanada toll methodology will be resumed.

TransCanada PipeLines Limited - Tolls

Following public hearing sessions in Ottawa between April and July 1985, the Board in October 1985 issued its Reasons for Decision on an application by TransCanada PipeLines Limited approving an increase in the tolls to be charged by TransCanada as of 1 November 1985 for the transportation of natural gas to markets in Canada and the United States.

The Board authorized a total cost of service for TransCanada of \$1 146 million, an increase of \$124 million, or 12.1 percent from the cost authorized by the Board for the previous year. Recovery of this amount increased tolls throughout TransCanada's system. For example, the increase in the toll for CD service in the Eastern Zone, between Windsor, Ontario and Quebec City, was 11.4 percent.

TransCanada PipeLines Limited - Availability of Services

The 31 October 1985 *Agreement on Natural Gas Markets and Prices* between the federal government and the producing provinces provided for direct sales of natural gas at prices and terms freely negotiated between producers and distributors or large industrial users, on condition that transportation service is made available for such sales.

Paragraph 7 of the Agreement states:

"To enable the market-responsive pricing system to operate within the intent of this Agreement, the governments request the National Energy Board to review the following concerns:

- i) whether inappropriate duplication of demand charges

will result from possible displacement of one volume of gas by another; and

- ii) whether the policy regarding the availability of T-Service, as outlined in the Board's latest TransCanada PipeLines toll decision is still appropriate, taking into account, among other things, interested parties' views on the fair and equitable sharing of take-or-pay-charges."

In response to this request, the Board decided to hold a public hearing. This hearing, scheduled to begin in January 1986, will also review related aspects of the Board's Reasons for Decision on TransCanada's tolls.

Orders for Direct Purchase of Alberta Gas

Immediately prior to the 31 October 1985 *Agreement on Natural Gas Markets and Prices* being announced, the Board received an application from Cyanamid Pipeline Inc. for orders to implement a direct purchase of Alberta natural gas for use at its ammonia production plant near Welland, Ontario.

Included in the application were requests for the Board:

- to order TransCanada PipeLines Limited to carry the gas for Cyanamid;
- to establish the transportation tolls for the movement of the gas; and
- to approve the construction of a six-kilometre pipeline from the ammonia plant to TransCanada's pipeline.

On application from Cyanamid, and after considering the comments of interested parties, the Board in

December approved an interim order which directed TransCanada to transport gas for Cyanamid and established the toll that TransCanada may charge for the transportation service.

In December, the Board received an application of essentially the same type—in this case, involving Saskatchewan gas—from Nitrochem Inc., a competitor of Cyanamid, operating an ammonia products plant at Maitland, Ontario. Nitrochem applied for both an interim and final order of the Board.

The Board plans to decide on Nitrochem's interim application early in the new year, and expects that the main Cyanamid and Nitrochem applications will be considered at a public hearing in 1986.

Pipeline Facilities

Canada LNG Corporation

In 1983 Dome Petroleum Limited applied to construct and operate facilities to manufacture liquefied natural gas for export to Japan. At the time, Dome was the holder of Licence GL-76, authorizing the export of LNG to Japan. An application was subsequently filed by Westcoast Transmission Company Limited to construct associated pipeline facilities.

A hearing on Dome's application began in October of 1983, but was adjourned in November 1983 pending the filing of further information in support of the application. As that information has not yet been filed, no date has been set for the continuation of the hearing.

In June 1984, the Dome and Westcoast applications and Dome's export licence were assigned, on

application, to Canada LNG Corporation, a corporation established to manage all aspects of the project¹.

Murphy Oil Company Ltd. - Certificate

In February, the Board held a public hearing in Calgary on an application by Murphy Oil Company Ltd. for a certificate to construct and operate a crude oil pipeline from a proposed tie-in with the Bow River Pipelines Ltd. system to Murphy's existing pipeline at Milk River, Alberta.

During 1985, the Board conducted 18 hearings and inquiries from Calgary, Alberta to Sherbrooke, Quebec, and in northern Canada.

Later in February, the Board issued its decision approving the application and in April released its Reasons for Decision. An alternative proposal by Bow River Pipelines Ltd. received approval from the Alberta Energy Resources Conservation Board, and was constructed. Consequently, the future of the Murphy project is uncertain.

Interprovincial Pipe Line Limited - Flamborough

In May 1983, the Board approved an application by Interprovincial Pipe Line Limited which permitted Interprovincial, among other things, to locate propane terminal facilities in the Flamborough area, near Burlington, Ontario.

Later in 1983, the Board held a public hearing in response to concerns raised by authorities and landowners in the Flamborough area over the location of the facilities. Hearings continued in 1984, with delays in the proceeding caused by legal matters before the Federal Court of Appeal and the Supreme Court regarding the Board's jurisdiction in the matter and the alleged bias of the Board's hearing panel.

After judicial proceedings were dismissed, the Board continued hearings in Burlington, Oakville, and Ottawa, Ontario in the spring and summer of 1985.

The Board expects to release its report on this matter early in 1986.

In a related matter, in October, the Board referred to the Federal Court of Appeal the question of the Board's jurisdiction to award costs, payable by Interprovincial, to several parties to the hearing².

Cochin Pipe Lines Ltd./Dome Petroleum Limited

In October and November, the Board held a public hearing to address the matter of the availability of propane terminal and storage facilities in Windsor, Ontario. Some users of the pipeline operated by Cochin Pipe Lines Ltd. had concerns about access to the storage facilities operated by Dome Petroleum Limited.

The Board plans to release the report on this hearing early in 1986.

1. On 30 January 1986, the Board was informed by Canada LNG Corp. that the project will be abandoned.

2. Refer also to *Awarding of Costs under Legal Actions*.

Polar Gas - Certificate

Polar Gas Limited filed an application in June 1984 for a certificate authorizing the construction of a 2 145-kilometre pipeline from the Mackenzie Delta to Edson, Alberta. The pipeline would transport 22.6 million cubic metres of natural gas per day to markets in the United States.

The application as filed was incomplete. The Board is awaiting further information from the project sponsors.

Facilities to Move Alberta Gas to the U.S. Northeast

In 1985, the Board received competing applications from TransCanada PipeLines Limited and Foothills Pipe Lines (Yukon) Ltd. for approval to construct pipeline facilities to transport Alberta natural gas to the northeast United States market area. Volumes of natural gas had been authorized for export to this market following the Gas Export Omnibus Hearing of 1982.

In addition, Midcontinental Transportation System has applied to American regulatory authorities for approval of pipeline facilities in the United States to serve the same market.

Subsequently, the proponents of the American facilities associated with the Foothills project decided to withdraw from the project.

Interprovincial Pipe Line Limited - Expansion Application

In May 1985, the Board held a public hearing in Hull, Quebec on an application by Interprovincial for approval to upgrade its crude oil system between Edmonton, Alberta, and Gretna, Manitoba, to meet a projected higher throughput demand.

The Board approved the application later in May. In August, the Board released its Reasons for Decision in the matter.

In November, Interprovincial filed another application, this time for approval to upgrade lines 1 and 3 of its pipeline system between Regina, Saskatchewan, and Gretna, Manitoba to meet projected throughput demand in 1988 and beyond.

The Board plans to hold a public hearing on the application in February 1986 in Ottawa.

Gas Exports

1985/86 Gas Export Omnibus Hearing

In November in Calgary and the following month in Ottawa, the Board held Phase I of the 1985/86 Gas Export Omnibus Hearing. Phase I was concerned with the procedures the Board uses to determine the surplus of natural gas in Canada available for export.

The Board expects to release its Reasons for Decision on Phase I in the first half of 1986.

The Board has not yet decided on the content, format, and timing of subsequent phases.

Northridge Petroleum Marketing, Inc. - Short-Term Gas Export

Following a public hearing in Ottawa in March, the Board approved an application by Northridge Petroleum Marketing Inc. to export natural gas to Southeastern Michigan Gas Co. of Port Huron, Michigan.

The Board issued an order to Northridge authorizing the export for a one-year period.

Alberta and Southern Gas Company Ltd. - Licence Consolidation

In September 1985, the Board held a public hearing in Calgary on an application by Alberta and Southern Gas Company Ltd. (A&S) to consolidate A&S' seven existing licences.

The Board closed the matter in November, after A&S withdrew the application.

Gas Licence Extensions Hearing

Following a public hearing in September, the Board in October 1985 issued its decision approving applications by TransCanada PipeLines Limited, KannGaz Producers Ltd., Pan-Alberta Gas Ltd., and ProGas Ltd. for various extensions in the terms of nine gas export licences, issued following the 1982 Gas Export Omnibus Hearing. Changes in export points, sought by some of the applicants, were denied by the Board.

The Board plans to issue its Reasons for Decision early in 1986.

Venture Gas Project - Gas Export

In July 1985, the sponsors of the Venture Gas Project, Mobil Oil Canada Ltd., Petro-Canada Inc., Texaco Canada Resources Ltd., and Nova Scotia Resources (Ventures) Limited, submitted applications for licences to export natural gas from the Sable Island area to the northeastern United States.

After considering the views of interested parties, the Board decided in August to conduct the hearing of these applications separately from the 1985/86 Gas Export Omnibus Hearing described earlier.

The Venture Gas Project applications, as filed, are not complete. The Board is awaiting further information, including that

on reserves and markets, from the applicants before proceeding to hear the applications.

Inquiries

Interprovincial Pipe Line Limited - Pipeline Space

In April 1985, Interprovincial Pipe Line Limited's system was in a situation where volumes tendered for shipment exceeded pipeline capacity. The Board decided to examine the appropriateness of its existing procedures for apportioning space on the Interprovincial line.

Following a public inquiry held in Ottawa in the spring, the Board issued its Reasons for Decision setting the new allocation procedures that Interprovincial must use when the volumes of oil tendered to it for shipment exceed pipeline capacity. The new system became effective in September 1985.

Northern Canada Power Commission

At the request of the Minister of Indian and Northern Affairs, the Minister of Energy, Mines and Resources requested the National Energy Board to inquire into and report on Northern Canada Power Commission's rate base, revenue requirements, and design of electrical rates for each zone in the Territories.

The five-member Board Panel, which included a temporary member from the Yukon and another from the Northwest Territories, conducted the inquiry in Whitehorse and Yellowknife during February and March.

The Board's report was submitted to the Minister of Energy, Mines and Resources and the Minister of Indian and Northern Affairs in June and was released in August 1985.

Interprovincial Pipe Line Limited - Inquiry into Accident near Strome, Alberta

In February, 1985, an accident on Interprovincial's pipeline system near Strome, Alberta resulted in the death of two employees and injuries to three others as a result of the ignition of natural gas liquids leaking from the pipeline.

The Board's inquiry was held in Edmonton, Alberta, in March and was adjourned until October to permit the injured to participate. The Board will release its report early in 1986.

TransCanada PipeLines Limited - Inquiry into Accident in Oshawa, Ontario

In October 1985, an explosion caused by an accidental rupture of TransCanada's natural gas pipeline in Oshawa, Ontario resulted in one fatality and three injuries. The deceased and injured were members of a work crew performing drain tile installation near the pipeline.

The Board's inquiry is expected to be held in early 1986.

Other Hearings

Shell Canada Limited

In October 1984, the Board held a public hearing on an application by Shell Canada Limited for orders that would require Air Canada, Nordair Ltd., Québecair and Pacific Western Airlines to pay Shell Canada the requisite minimum, just and reasonable price for aviation turbine fuel consumed by them between February 1982 and April 1983.

The Board dismissed the application, releasing its Reasons for Decision in January 1985.

Other Board Activities

During 1985, the Board carried out a wide variety of regulatory activities that did not require public hearings, relating to energy exports and pipeline construction, conducted or encouraged studies on energy-related matters, including negative salvage value and odour emissions, and held several information sessions on the Board's regulatory process.

Oil

Policy and Procedure Changes Under the Western Accord

In March, the federal government and the energy-producing provinces of Alberta, Saskatchewan and British Columbia signed a comprehensive energy agreement entitled the *Western Accord*. Key elements of this agreement were the elimination of administered prices for crude oil, effective 1 June 1985, as well as the elimination of restrictive controls on the exportation of crude oil and petroleum products, and on the importation of heavy fuel oil.

The charges levied on exports of crude oil and petroleum products produced after 31 May 1985 also ended. Licences covering short-term exports of oil subject to Board authorization were replaced by orders of the Board, issued to registered exporters. These orders authorize the export of heavy crude oil for periods not exceeding two years and of light crudes and petroleum products for periods not exceeding one year, without specifying volumes or prices. In 1985, the Board issued orders to some 80 companies for the exportation of light and heavy crude oil and petroleum products, and is monitoring actual export quantities.

Under the *Western Accord*, authorization is also no longer required for the export of oil which is subsequently re-imported.

The Board continues to provide monthly advice on oil supply and demand matters to the industry and federal and provincial officials. The Board continues to monitor oil prices and volume flows in order to be in a position to advise the government. Pursuant to the *Western Accord*, the Board has the responsibility to report to the Minister of Energy, Mines and Resources each month on such matters.

The program which provides for the equal sharing of revenue from export charges on crude oil between the federal government and the producing provinces was officially terminated on 1 June. However, some adjustments required Board attention into the fall of 1985. During the lifetime of this program, from November 1980 to June 1985, approximately \$1 216 million in revenues were distributed among the producing provinces. In 1985, about \$229 million in revenues were distributed.

The oil appendices at the back of this report list orders issued by the Board in 1985 for exports and exchanges of crude oil and exports of petroleum products, and charges for the export of crude oil and petroleum products.

Natural Gas

Policy and Procedure Changes for Natural Gas Exports

The 31 October 1985 *Agreement on Natural Gas Markets and Prices* embodied changes in the natural gas export pricing policy affecting both short-term orders and long-term export licences. These

changes are designed to make Canadian gas more competitive in American markets and to further the policy of negotiated gas export prices which came into effect on 1 November 1984.

The new market-oriented policy allows a more flexible approach to Canadian participation in the American spot market, subject to the requirement that the price of exported gas must not be less than the price charged to Canadians for the same type of service in the area or zone adjacent to the export point. The new policy no longer requires that sales be truly incremental and not displace other Canadian sales. Other criteria applicable to long-term export sales, such as producer endorsement, provisions for adjusting export prices to reflect changing market conditions, and reasonable assurances by exporters that the volume contracted will be taken, are still in effect.

The amended policy now allows the Board to issue short-term orders for periods of up to two years, for either firm or interruptible exports, with no volume restrictions. Currently, if an application is complete in all respects, the Board issues short-term orders within three days.

In cases that involve changes to the terms and conditions of export sales under an existing long-term licence, the Board seeks comments from interested parties, where it is deemed appropriate. If the circumstances warrant, the Board may also conduct a public hearing regarding the application. When a public hearing is not considered necessary, the Board will complete its review on the basis of the information before it.

For the small volume of exports under the Volume Related Incentive Pricing Program (VRIP) during the 1985-86 licence year, the base price is \$U.S. 4.10 per gigajoule (\$U.S. 4.40 per MMBtu), and the incentive price is \$U.S. 3.17 per gigajoule (\$U.S. 3.40 per MMBtu). The threshold level will be the lesser of 50 percent of the authorized annual licence quantity or the 1981-82 actual sales.

Propane and Butanes

In 1985, the Board continued to authorize exports of propane and butanes. However, during the year, two important changes to export procedures were introduced:

- Effective 1 April 1985, volume restrictions on short-term export orders for propane were removed. A similar relaxation of export control for butanes was implemented in 1983.
- Effective 6 June 1985, the Board ceased to set minimum export prices for propane and butanes exported from Canada.

Despite these alterations to the export control program, the Board continues to monitor supply, demand, export quantities and export prices of propane and butanes to ensure that supplies continue to meet domestic requirements.

Ethane and Ethylene

For purposes of export regulation, ethane is subject to the same criteria as natural gas; however, the Board decided to remove all export controls on ethylene effective 1 April 1985. No licences or orders were issued for the export of ethane or ethylene during 1985.

The gas appendices at the back of this report list the orders issued by the Board in 1985 for the exports and imports of gas, gas liquids, and ethylene, and outstanding licences for the export of natural gas and natural gas liquids.

Electricity

During 1985, the Board continued to play a strong advisory role, consulting with and contributing to the operations of industry agencies and other government departments on electric power matters. Among other achievements, the Board made available to the electric utility industry a computer program to calculate the economic benefits of economy energy interchanges between two power systems.

Board staff keep abreast of developments in electricity as Canadian observers to the North American Electric Reliability Council, a voluntary organization of electric power utilities that supply virtually all the electric power to the United States and Canada. In addition, staff continued to participate in the activities of the Canadian Electrical Association, the Canadian Standards Association and other technical societies.

The electricity appendices at the back of this report list a new certificate and new licences and orders to export power and energy and exports of electric energy under each licence and order. Total electricity trade for the period 1981-1985 is shown in the Energy Overview Appendix.

Pipeline Activities

The Board regulates a total of 39 gas, oil, and products pipeline companies. These pipeline systems are shown on Figures 9 and 10.

All new pipeline facilities must be authorized by the Board prior to their construction. The gas and oil appendices at the back of this report list the orders and certificates issued in this regard in 1985.

The Board is also responsible for monitoring the construction and operation of pipeline facilities to ensure compliance with the Board's safety and environmental regulations and any specific conditions of the approving order or certificate. In addition, the Board reviews construction and operation costs to ensure that the tollpayer receives cost-effective service.

Board staff keep abreast of developments in electricity as Canadian observers to the North American Electric Reliability Council.

Completion of the Norman Wells Pipeline highlighted pipeline activity in 1985. From January to March, Interprovincial Pipe Line (NW) Limited constructed the final 282 kilometres of the 869-kilometre pipeline system. The system, which transports crude oil from the Northwest Territories to Northern Alberta at a capacity of 5 000 cubic metres per day, commenced operation in April. Throughout construction, the Board conducted inspections to ensure compliance with approved technical and environmental designs. The Board continues to monitor system operation and right-of-way restoration.

Approvals

Interprovincial Pipe Line Limited launched an expansion program aimed at increasing the capacity and flexibility of its system in western Canada. New facilities constructed to date include modifications to existing pump stations and a 14.5-kilometre pipeline replacement near Camrose, Alberta.

Westcoast Transmission Company Limited received approval to replace a total of 40 kilometres of pipe in 19 locations. These replacements were required to upgrade the pipeline in areas of increased population density.

TransCanada PipeLines Limited was given approval to abandon 25 kilometres of loop line in the area of Brampton, Ontario. This line was unnecessary from an operational standpoint and involved maintenance costs.

The Board approved an application by Cochin Pipe Lines Ltd. for temporary facilities to allow a test batch of natural gas liquids to be shipped through its pipeline. Successful results have led Cochin to propose the regular shipping of natural gas liquids to eastern Canada.

Trans Mountain Pipe Line Company Ltd. received approval for system modifications to allow refined products to be shipped from Edmonton, Alberta to Kamloops, British Columbia.

The Board also approved new gas delivery facilities in a total of nine locations for TransCanada PipeLines Limited, Alberta Natural Gas Company Ltd., Trans Québec & Maritimes Pipeline Inc. and Westcoast Transmission Company Limited. In addition, the Board approved various other

Figure 9

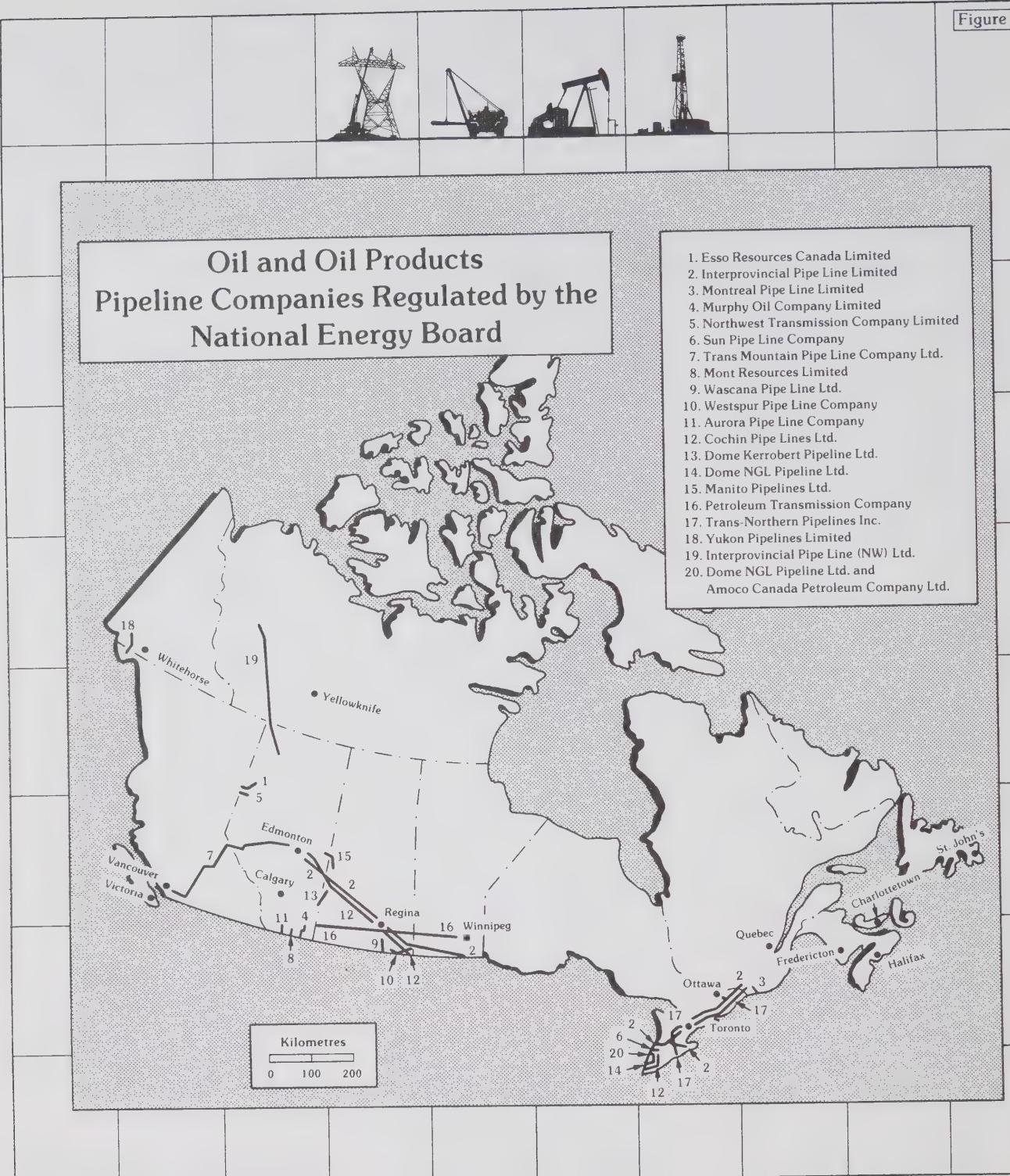
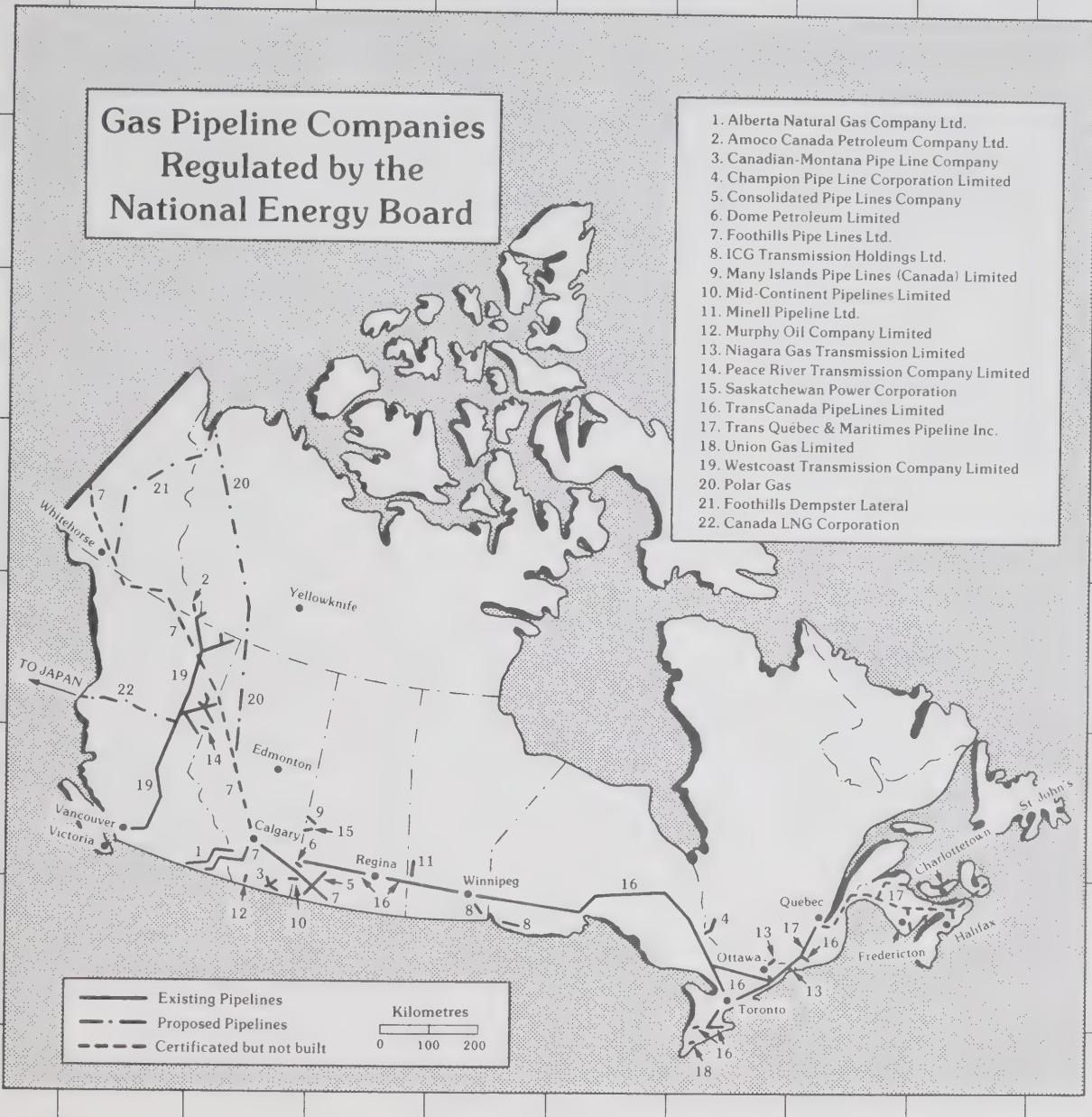


Figure 10



applications dealing with pipeline replacements and modifications to existing pipeline facilities.

Research

The Board released a paper entitled "Background Paper on Negative Salvage Value" that addresses the environmental, engineering and financial factors that must be considered before a pipeline is removed or abandoned. The paper is intended to stimulate discussion on this topic in the pipeline industry.

Pipeline Incidents

The Board requires detailed reports of all incidents involving personal injury or fatality, pipeline malfunction such as a leak, break, fire, or explosion, or any other event which results in a loss of service of a pipeline under its jurisdiction. The Board conducts public inquiries, as appropriate, to ascertain the cause of the incident and, when necessary, to establish specific measures to prevent a recurrence of that type of incident. These reports and inquiries are considered when revising pipeline safety and operational standards and regulatory requirements.

When a pipeline is damaged, the Board ensures that steps are taken

to contain spills of hydrocarbons, to provide protection to the public and to property, and to repair the damaged pipeline and return it to service as quickly as possible. The Board continues its surveillance of the site to ensure the effectiveness of the company's environmental rehabilitation program. During 1985, the Board conducted various field inspections at pipeline incident locations to monitor the implementation of established emergency, safety, and environmental protection procedures.

Table 5 shows the causes of pipeline incidents for the period 1981-85. A total of 31 incidents occurred in 1985, or approximately one incident for every 1 000 kilometres of pipeline under the Board's jurisdiction.

Routine Inspection

Throughout the summer of 1985, the Board continued its routine inspection program directed at the operational, maintenance, and safety practices of pipeline companies.

These inspections enable the Board to continually assess the overall state of repair and operating

conditions of each company's pipeline system and to maintain records of pipeline companies' adherence to the standards set in the Board's oil and gas pipeline regulations.

Utility Crossing and Infringements

All utility construction affecting pipelines regulated by the Board require its approval. Proposed activities must meet the standards ensuring safe construction practice.

In 1985, 749 applications relating to crossings or infringements were approved by the Board.

Environmental Matters

Environmental Protection

The construction and operation of pipelines and power lines can have a wide range of environmental effects. Consequently, the Board carefully audits that the environment is properly protected during all phases of project development and operation.

In 1985, the Board carried out environmental inspection during the construction of the Interprovincial Pipe Line (NW) Ltd. Norman Wells pipeline and Hydro-Québec's ±450-kilovolt direct current international power line from its Des Cantons substation to the American border. During the summer of 1985, the Board also inspected the post-construction condition of the Norman Wells pipeline.

For major projects, the Board requires companies to submit post-construction environmental reports documenting the recovery of the right-of-way following construction. Monitoring reports reviewed in 1985 included those submitted by Trans Québec & Maritimes Pipeline Inc. and Interprovincial Pipe Line (NW) Ltd.

Table 5

Causes of Pipeline Incidents 1981-1985

| | 1981 | 1982 | 1983 | 1984 | 1985 |
|--------------------|------|------|------|------|------|
| Defective Welds | 1 | 3 | 6 | 4 | 5 |
| Material Failures | 3 | 1 | 2 | 10 | 4 |
| Third Party Damage | 5 | 8 | 4 | 5 | 6 |
| Corrosion | 17 | 8 | 7 | 6 | 5 |
| Miscellaneous | 5 | 11 | 14 | 9 | 11 |
| Total | 31 | 31 | 33 | 34 | 31 |

In 1985, several field inspections were conducted at various locations to monitor the condition and recovery of right-of-ways following construction.

Besides regulating pipelines and international power lines, the Board monitors the operation of associated facilities such as gas plants and oil-loading terminals for compliance with environmental requirements. In 1985, the Board encouraged a study of equipment and procedures necessary to eliminate odour emissions during crude oil tanker loadings at Trans Mountain Pipe Line Company Ltd.'s Westridge Oil Terminal on Burrard Inlet in Burnaby, British Columbia.

During the year, the Board developed an Environmental Issue List concept, which is designed to help companies address environmental concerns.

Other Environmental Activities

The Board's non-regulatory environmental activities included the preparation of a paper entitled "Pipeline Construction: Prevention of Impacts to Agricultural Lands", which was published in the journal of the International Right-of-Way Association. The Board also participated in a series of interdepartmental meetings to discuss the Department of Fisheries and Oceans' proposed Fish Habitat Management Policy.

An "Environmental Surveillance Manual" was produced and is intended as a guide for the Board's environmental inspectors during field inspection of facility construction.

During 1985, the Board held several information sessions to guide provincial government

agencies on effective participation in the Board's regulatory process. To maintain an awareness of current environmental issues and developments, environmental staff also attended conferences and workshops on a wide range of key topics.

Financial Regulatory Matters

During 1985, a number of major public hearings were held to determine just and reasonable tolls for pipelines as well as to determine rate regulation methodologies. Details of these hearings were provided earlier in this chapter.

In addition, the Board continued to monitor the financial results and accounting practices of the 39 oil and gas pipeline companies under its jurisdiction. This is accomplished through the analysis of regular surveillance reports submitted by the companies to the Board and by ongoing field examinations. In order to decrease the regulatory burden on pipeline operators, guidelines were issued during the year to significantly reduce filing requirements for the 29 smaller pipeline companies. These companies are now regulated on a "complaint" basis. The remaining ten major operators continue to be subject to the full regulatory reporting requirements. Figures 11 and 12 reflect the key 1985 financial statistics for the major pipelines.

In response to the *Agreement on Natural Gas Markets and Prices*, the Board is examining the establishment of transportation tolls and tariffs to enable gas producers to make direct sales to the end-users in order to allow freer access to domestic and export markets for natural gas.

During 1985, the Board authorized the establishment of temporary tolls for interruptible transportation service on the Westcoast Transmission system effective 1 August 1985. These tolls were established to enable direct sales to take place and will be reviewed in Westcoast's 1986 toll hearing.

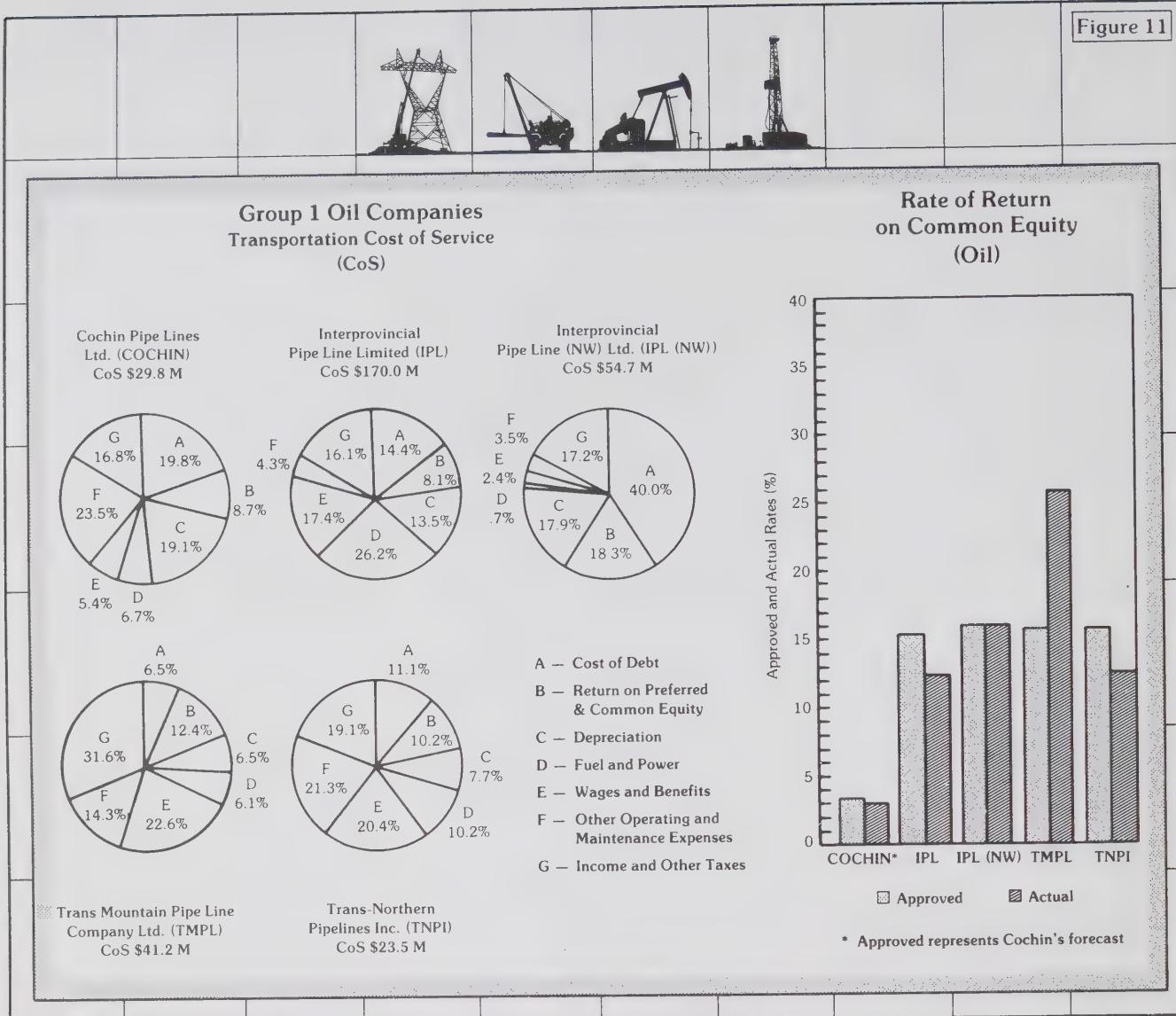
In 1985, the Board accepted two tariffs filed by Cochin Pipe Lines Ltd. offering special discounted summer rates. The reduced rates were for the shipment of propane and ethylene to southern Ontario and to the midwestern United States.

Following the Board's decision to make pipeline compliance audit reports available to the public, 11 such audit reports were completed by Board staff and are now available.

Under the provisions of the Energy Administration Act and regulations, the Board is responsible for the audit of licensed crude oil and bulk petroleum product export charges. This program was terminated effective 1 June 1985, but the Board is responsible for auditing all exports up to that date. During 1985, charges collected from these exports totalled \$534 million.

Under the Transportation Fuel Compensation Recovery (TFCR) Charge program, the Board was delegated responsibility for collecting export charges applied to aviation and marine fuels consumed in international transportation. Although this program has since ended, the Board has continued, on behalf of the federal government, to complete the processing of refunds to air carriers and the verification of levies on marine suppliers and operators. During 1985, the Board ordered refunds totalling \$2.7 million to the parties affected.

Figure 11



Legal Actions

The New Brunswick Electric Power Commission

In March 1985, the New Brunswick Electric Power Commission (N.B. Power) filed with the Federal Court of Appeal:

- an application under subsection 18(1) of the National Energy Board Act for leave to appeal the Board's 20 February 1985 decision concerning Maritime Electric Company Limited (MECL) and N.B. Power; and

- an application pursuant to section 50 of the Federal Court Act for a stay of the Board's decision and Order No. MO-9-84 in respect of the MECL/N.B. Power matter.

The applications were argued before the Court on 17 and 18 April and leave to appeal was granted. The Court, in a decision dated 3 June 1985, denied the application for a stay of the Board's decision and order. The appeal was argued before the Federal Court of Appeal in July 1985 and was dismissed in a decision dated 6 August 1985.

On 3 October 1985, N.B. Power filed with the Supreme Court of Canada an application for leave to appeal the judgment of the Federal Court of Appeal. On 21 November 1985 the application was dismissed with costs.

Awarding of Costs

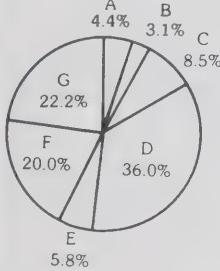
During a hearing that reviewed the Board's decision to permit Interprovincial Pipe Line Limited to locate propane terminal facilities in the Flamborough, Ontario area, several parties asked that the Board make an award of costs, payable by Interprovincial, in their favor. By

Figure 12

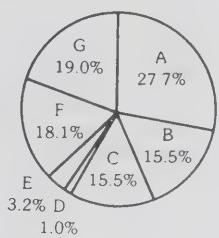


Group 1 Gas Companies Transportation Cost of Service (CoS)

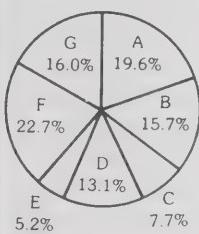
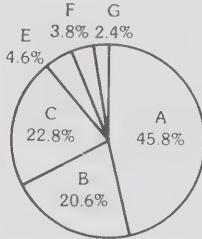
Alberta Natural Gas Company Ltd (ANG)
CoS \$22.5 M



Foothills Pipe Lines (Yukon) Ltd. (FHILLS)
CoS \$211.7 M



Trans Québec & Maritimes Pipeline Inc. (TQM)
CoS \$86.9 M

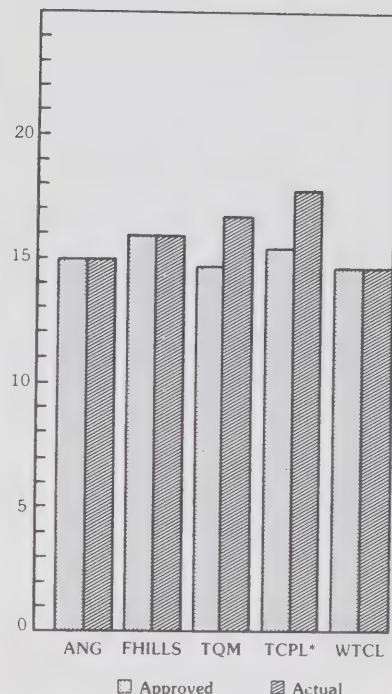


TransCanada PipeLines Limited* (TCPL)
CoS \$1 086.4 M

Westcoast Transmission Company Limited (WTCL)
CoS \$292.0 M

- A — Cost of Debt
- B — Return on Preferred & Common Equity
- C — Depreciation
- D — Fuel and Power
- E — Wages and Benefits
- F — Other O & M, Special Charges & Transmission by Others
- G — Income and Other Taxes

Rate of Return on Common Equity (Gas)



* Test year ended 31 July 1985

letter dated 17 October 1985, the Board referred the question of the Board's jurisdiction to award costs in this hearing to the Federal Court of Appeal. It is expected that the matter will be argued before the Federal Court of Appeal in April 1986.

Canadian Pacific Airlines Limited and Wardair Canada (1977) Ltd.

Actions brought by Canadian Pacific Airlines Limited and Wardair Canada (1977) Ltd. in the Federal Court, Trial Division, against the Attorney General of Canada and the Board remained

essentially dormant. The airlines are seeking declarations regarding the validity under the National Energy Board Act of the export licensing and prescription of minimum export prices for jet fuel consumed by those airlines on international flights from May 1981 to April 1983.

Collection of Export Charges and Unlicensed Exporters

As part of its duty under the Energy Administration Act to administer the collection of charges on oil exported from Canada, the Board assists the Department of Justice in

legal actions to collect unpaid export charges. Judgment was obtained in one such action in June 1985. During the year, enforcement procedures were undertaken on this judgment and on a similar judgment rendered late in 1984.

In penal matters, a conviction for the export of oil without a licence under the National Energy Board Act, obtained by the Board in late 1984, was appealed by the accused in January 1985. In October 1985, the appeal was dismissed as abandoned.

Legislation and Regulations



The following section outlines changes that were made during 1985 to the Acts, Regulations, or Rules under which the Board operates. The Board's quarterly Regulatory Agenda provides more detailed information on this subject.

Amendments to the National Energy Board Act Regulations

National Energy Board Part VI Regulations

These regulations, which relate to the export and import of oil, gas, and electricity, were amended several times during the year, mainly as a result of the extensive activity in the deregulation of energy. Amendments, completed or in various stages of preparation, include the following:

- Amendment to section 6 concerning the information required in support of an application for a licence to export electricity. Comments by interested parties have been received and are under review.
- Amendment to section 8 to include the government's recent decision to deregulate short-term exports of natural gas by providing for two-year orders with no volume
- Amendment to section 10 and sections 24 through 32 of the Regulations, with the exception of section 31, to effect the deregulation of short-term oil exports according to the provisions of the *Western Accord*. These sections set out the conditions under which the Board may authorize the short-term export of oil and petroleum products, and related details. The amendment was approved by Governor in Council in April 1985.
- Amendment to sub-section 18(1)(c) to permit holders of electrical orders authorizing exports of 1 000 kilowatts or less to file export reports less frequently than monthly but at least annually. The amendment was approved by Governor in Council in March 1985.
- Amendment to section 20 to remove export controls on ethylene. The amendment was approved by Governor in Council in May 1985.
- Amendment to sections 24, 26 and 27 to require the Board to specifically approve by order certain marine exports from the

restrictions. The amendment was approved by Governor in Council in November 1985.

west coast of Canada of crude oil containing more than 0.9 percent sulphur. Marine exports from the west coast for subsequent import into Canada are also covered. The amendment also permits the Board to condition the order to provide that the exporter require the company loading the oil to use its best efforts to minimize the emission of odours. The amendment was approved by Governor in Council in December 1985.

Gas Export Prices Regulations

In April 1983, the Governor in Council implemented the Gas Export Prices Regulations to prescribe the price of natural gas exported under the authority of the Part VI Regulations.

Throughout 1985, there were amendments to the provisions of the Regulations relating to the Volume Related Incentive Pricing Program, including the extension of the program to 31 October 1986. Under this scheme, introduced in July 1983, exporters were allowed to sell quantities of natural gas in excess of an established base level at an incentive price.

Other amendments to these Regulations were made throughout

the year up to 1 November, when short-term exports of gas were deregulated. These amendments prescribe the prices of gas exports negotiated by individual companies.

Foothills Pipe Lines (Yukon) Ltd. Special Charge Accounting Regulations

In June 1984, the Board distributed for comment to Foothills (Yukon) and interested parties draft Special Charge Accounting Regulations designed to permit refunding of the Special Charge to shippers on the prebuild system (Phase I) when the mainline (Phase II) is completed. On the basis of comments received from Foothills (Yukon) and interested parties, the Board decided in October 1985 to defer consideration of the regulations until a future Foothills (Yukon) tolls hearing.

Pipelines Companies Records Preservation Regulations

Amendments were made to the Pipelines Companies Records Preservation Regulations to require pipeline companies to retain certain records such as vouchers and invoices until a six-year period has elapsed. Formerly, this was permitted one year after leave to abandon the operation of a pipeline had been granted by the Board. The amendments were approved by the Governor in Council in September 1985.

Amendments made pursuant to the Energy Administration Act

The Board is responsible for administering the provisions of Parts I, I.1 and III of the Energy Administration Act. The following provisions were amended during 1985.

Energy Administration Act Part I Regulations

Three amendments were made modifying the provisions governing the procedures for making payments of 50 percent of the revenues from crude oil export charges to producing provinces. The amendments were approved by Governor in Council in February, June and September 1985.

Natural Gas Prices Regulations and Special Pricing Orders

During 1985, a number of amendments were made to the Natural Gas Prices Regulations, 1981 to prescribe prices at which companies sell Alberta gas outside Alberta for consumption in the domestic or export market. In addition, the Board amended several orders under section 53 of the Act to approve the prices at which gas is purchased within Alberta and British Columbia for consumption outside those provinces.

Submission to U.S. Federal Energy Regulatory Commission - (FERC Order 380)

In June, the Board received from the Federal Energy Regulatory Commission a Notice of Proposed Rulemaking (Order No. 380), which proposed comprehensive changes to the Commission's regulations governing the transportation of natural gas by interstate pipelines. In a submission to the Commission in July, the Board expressed concern about a number of proposals which the Board felt might discriminate against Canadian gas. The Board was particularly concerned about the impact on Canadian exports of gas of Part D of the Commission's

proposal, which relates to the pricing of natural gas by pipelines.

In early October 1985, the Commission issued a Final Rule which adopted many of the original proposals. However, the Commission deferred its decision regarding Part D pending receipt of further comments. In a further submission to the Commission in November 1985, the Board reiterated its concerns about the potential effects of the proposals in Part D on the marketability of Canadian gas in the United States.

Regulatory Reform

During 1985, the Board continued its various initiatives in the area of regulatory reform. The most important of these are described below.

Rules of Practice and Procedure

The Board is in the process of replacing its existing Rules of Practice and Procedure. The Rules explain in general how to make an application to the Board. They also specify the procedures to be followed in connection with a public hearing, including a description of the form and content of documents to be filed with the Board, and the procedures for bringing notices of motion before the Board or applying for a review or re-hearing. The draft Rules were approved by the Board and the Board has asked that all parties start using them. The Rules will now be examined formally by the Department of Justice and published in the Canada Gazette.

In August 1985, the Board issued for comment a revised Part III of the Schedule to the Rules of Practice and Procedure. This document lists the information required with an application for a certificate to

authorize the construction and operation of an international power line. Comments have been received from interested parties and are under review.

A revised Part VI of the Schedule to the Rules of Practice and Procedure, dealing with environmental requirements in applications for pipelines and related facilities, was issued for comment in September 1985. Additional information on this revised part may be found under *Environmental Information Requirements*.

Onshore Pipeline Regulations

The Board completed a comprehensive review aimed at consolidating and improving the Oil Pipeline Regulations and the Gas Pipeline Regulations. In November 1985, the Board issued a draft of the new Onshore Pipeline Regulations for comment by industry and for detailed review by an industry task force. These regulations provide for the safe design, construction and operation of onshore oil and gas pipelines.

Offshore Pipeline Regulations

In late 1984, the Board issued for comment the first draft of new Offshore Pipeline Regulations. These regulations govern the safe design, construction, and operation of offshore pipelines, and employ the CSA preliminary standard, "CSA Z187, Offshore Pipeline Standard", as a technical basis.

In April 1985, interested parties were invited to submit comments on these regulations. Following a meeting with industry representatives, an industry task force was established to review these regulations. Based on the results of this review, a further draft

was prepared, which will be submitted in early 1986 for review by the industry task force and other interested parties.

Level of Regulation of Pipelines

The Board conducted a review to determine the appropriate level of detail for regulating major and other pipelines. The review identified a number of areas where regulation of certain pipeline companies under Parts III and IV of the National Energy Board Act

**Comprehensive
amendments were made to
the NEB Part VI
Regulations, mainly as a
result of the extensive
activity in the deregulation
of energy**

could be simplified without jeopardizing the public interest. Proposed guidelines to accomplish this were issued in August 1985. These will significantly reduce the regulatory burden on 29 oil and gas pipeline companies (Group 2 companies). The remaining 10 major pipelines (Group 1 companies) are not affected and continue to be subject to existing regulatory requirements.

Both the Oil Pipeline and the Gas Pipeline Uniform Accounting Regulations will be amended to exempt Group 2 companies from the requirement to keep a standard code of accounts as prescribed in the Regulations. This change is subject to the approval of the Governor in Council.

Environmental Information Requirements

In September 1985, the Board asked interested parties for comments on two draft documents outlining the environmental information required from companies applying to construct pipelines and related facilities.

One document proposed guidelines for applications involving processing and storage facilities, such as gas processing and straddle plants, liquefied natural gas plants, oil storage tanks, and gas products transfer plants. The other documents proposed amendments to Part VI of the Schedule to the Rules of Practice and Procedure. The revised Part VI would concern the environmental requirements in applications for all other pipeline and related facilities.

A revised draft of both documents was sent to an industry task force and provincial governments for further comment in December 1985, and a meeting with the task force is scheduled for January 1986.

Toll Adjustment Procedures

The Board reviewed toll adjustment procedures for the large oil pipelines, viz., Interprovincial Pipe Line Limited, Trans Mountain Pipe Line Company Ltd., Trans-Northern Pipelines Inc. and Cochin Pipe Lines Ltd. In June 1985, the Board issued revised toll application procedures for the first three companies. The Board is continuing to review the procedures applicable to Cochin.

Construction Cost and Financial Information Regulations

New draft regulations on the information required from companies that construct and

operate a pipeline were issued for comment in August 1985. These Construction Cost and Financial Information Regulations, which apply only to large pipeline companies, would replace the existing Toll Information Regulations, as well as the Board's Memorandum of Guidance of 21 October 1966. Final comments have been received and are under review.

Power Export Information Regulations

The Board issued guidelines in May 1985 on the information required in applications for the export of

power by order without a public hearing. Revised guidelines were required following a 1984 amendment to the Part VI Regulations that authorized higher limits on the amount of power and energy that may be exported under an order.

Controls on Liquefied Petroleum Gases (LPG)

In late 1984, the Board solicited the views of the producing and marketing sectors of the LPG industry and other interested parties on whether propane should be decontrolled in the same manner as were butanes in October 1983.

The survey was initiated following strong indications from the industry that it was time to review the need for continued controls on the export of propane.

In January, the Board decided that, effective 1 April 1985, volume restrictions on short-term authorizations of exports of propane by order should be removed. However, exporters still require an authorization from the Board and must meet the minimum export price determined by the Board.

At the same time, the Board decided to remove all export controls for ethylene. (See *National Energy Board Part VI Regulations*.)



Appendices



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Energy Overview

1. Canadian Consumption of Primary Energy^a (Petajoules)

| | 1981 | 1982 | 1983 | 1984 | 1985(e) |
|----------------------------------|--------|--------|--------|--------|---------|
| Petroleum ^b | 3785.0 | 3381.2 | 3160.1 | 3160.6 | 3120.9 |
| Natural Gas ^c | 1772.9 | 1798.8 | 1847.7 | 2003.7 | 2116.1 |
| Hydro Electricity ^d | 950.9 | 935.2 | 947.1 | 1020.5 | 1080.0 |
| Nuclear Electricity ^d | 147.2 | 143.3 | 177.6 | 189.5 | 216.0 |
| Coal | 947.9 | 1001.7 | 1048.0 | 1167.4 | 1105.0 |
| Renewable | 452.8 | 470.1 | 487.1 | 476.1 | 503.6 |
| TOTAL FOR CANADA | 8056.7 | 7730.3 | 7667.6 | 8017.8 | 8141.6 |

a — Includes non-energy use, own use, and conversions and includes fuel for electricity export.

b — Includes LPGs.

c — Excludes reprocessing shrinkage and includes ethane.

d — Converted using a factor of 3.6 petajoules per terawatt hour which is the energy content of electricity output.

If the electricity were converted to energy units, assuming that the amount of primary energy associated with hydro and nuclear electricity is the amount of energy contained in fossil fuels required to generate equivalent electricity, then a factor of 10.5 petajoules per terawatt hour would be used and the result would be:

| | 1981 | 1982 | 1983 | 1984 | 1985(e) |
|-------------------------------|--------|--------|--------|--------|---------|
| Hydro and Nuclear Electricity | 3206.3 | 3149.1 | 3284.1 | 3533.2 | 3780.0 |
| (e) Estimate. | | | | | |

Energy Overview

2. Crude Oil and Equivalent Hydrocarbons Production, Imports, Exports, and Domestic Demand (Thousands of Cubic Metres per Day)

| | 1981 | 1982 | 1983 | 1984 | 1985(e) |
|------------------------------|-------|-------|-------|-------|---------|
| Canadian Production | 220.1 | 217.7 | 230.1 | 243.5 | 250.6 |
| Imports ^a | 71.4 | 43.8 | 34.6 | 34.2 | 39.5 |
| Total Supply | 291.5 | 261.5 | 264.7 | 277.7 | 290.1 |
| Domestic Demand ^b | 275.0 | 246.7 | 229.8 | 229.2 | 226.9 |
| Exports ^a | 15.8 | 24.8 | 42.8 | 49.8 | 75.3 |

a — Excludes exchanges between Canada and the United States.

b — Includes own consumption and domestic demand for refinery LPG. The difference between Total Supply and Total Demand is stock changes.

(e) Estimate.

Energy Overview

3. Natural Gas Deliveries (Billion Cubic Metres at 101.325 KPa and 15° Celsius)

| | 1981 | 1982 | 1983 | 1984 | 1985(e) |
|----------------------------------|------|------|------|------|---------|
| Net Sales in Canada ^a | 43.1 | 44.2 | 44.1 | 47.7 | 49.9 |
| Other Canadian Uses ^b | 3.4 | 3.1 | 1.2 | 2.1 | 2.3 |
| Exports | 21.6 | 22.2 | 20.2 | 21.4 | 26.2 |
| Total Deliveries ^c | 68.1 | 69.5 | 65.4 | 71.2 | 78.4 |

a — Net sales includes other deliveries.

b — Includes pipeline fuel and losses, less imports and inventory changes.

c — Marketable pipeline gas.

(e) Estimate.

Energy Overview

4. Electricity Generation, Imports, Exports, and Domestic Demand (Terawatt Hours)

| | 1981 | 1982 | 1983 | 1984 | 1985(e) |
|----------------------|-------|-------|-------|-------|---------|
| Total Generation | 380.1 | 376.8 | 395.9 | 424.9 | 445.0 |
| Imports ^a | .5 | .3 | .2 | .3 | .2 |
| Total Supply | 380.6 | 377.1 | 396.1 | 425.2 | 445.2 |
| Domestic Demand | 345.9 | 344.1 | 359.2 | 387.6 | 403.7 |
| Exports ^a | 34.7 | 33.0 | 36.9 | 37.6 | 41.5 |

a — Excludes exchanges between Canada and the United States.

(e) Estimate.

Gas

1. Orders Issued During 1985 Approving New Gas Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

| Applicant | Order No. | Issued | Facilities | Estimated Cost (\$) |
|--|-----------|----------|---|---------------------|
| Alberta Natural Gas Company Ltd. | XG-11-85 | 85-11-14 | Byron Creek Sales Tap, together with 0.5 km of 114.3 mm diameter connecting line and gas measuring facility, British Columbia | 110 000 |
| Champion Pipe Line Corporation Limited | XG-14-85 | 85-12-18 | Two tapping tee assemblies, Ontario | Not identified |
| ICG Transmission Holdings Ltd. | XG-5-85 | 85-06-26 | Construction of 0.3 kilometre of 323.9 mm diameter pipeline and Block Valve Assembly, Ontario | 694 305 |
| ICG Transmission Holdings Ltd. | XG-12-85 | 85-11-27 | Upgrading Rainy River City Gate Meter Station, Ontario | 50 000 |
| Many Islands Pipe Lines (Canada) Limited | XG-9-85 | 85-08-14 | Gas supply tie-in, Saskatchewan | 45 000 |
| TransCanada PipeLines Limited | XG-1-85 | 85-01-23 | Kemptville Sales Tap, Ontario | 70 600 |
| TransCanada PipeLines Limited | XG-3-85 | 85-04-24 | Richardson Sales Tap, Saskatchewan | 76 000 |
| TransCanada PipeLines Limited | XG-4-85 | 85-05-23 | Richmond Sales Meter Station, Ontario | 725 000 |
| TransCanada PipeLines Limited | XG-6-85 | 85-06-12 | Val Rita Sales Tap, Ontario | 60 000 |
| TransCanada PipeLines Limited | XG-10-85 | 85-08-07 | Cornwall West Sales Meter Station, Ontario | 450 000 |
| TransCanada PipeLines Limited | XG-13-85 | 85-12-11 | Cookstown Sales Meter Station, Ontario | 275 000 |
| Trans Québec & Maritimes Pipeline Inc. | XG-8-85 | 85-07-17 | Donnacona Penitentiary Gas Delivery Facilities, Québec | 20 500 |
| Westcoast Transmission Company Limited | XG-2-85 | 85-04-11 | NGL Meter Station, Meter Station No. 66, British Columbia | 1 827 000 |
| Westcoast Transmission Company Limited | XG-7-85 | 85-07-15 | Upgrading of 762 mm mainline crossing Coquihalla River, British Columbia | 550 000 |

Gas

2. Orders Issued During 1985 Approving Modifications and Additions to Existing Gas Pipeline Facilities

| Applicant | Order No. | Issued | Facilities | Estimated Cost (\$) |
|--|-----------|----------|---|---------------------|
| Alberta Natural Gas Company Ltd. | XGM-1-85 | 85-01-09 | Station modifications and general plant | 1 524 095 |
| Alberta Natural Gas Company Ltd. | XGM-23-85 | 85-12-11 | Station modifications and general plant | 2 120 100 |
| Foothills Pipe Lines (Alta.) Ltd. | XGM-9-85 | 85-05-01 | Compressor station modifications | 185 100 |
| Foothills Pipe Lines (Sask.) Ltd. | XGM-9-85 | 85-05-01 | Compressor station and meter station modifications | 1 243 100 |
| Foothills Pipe Lines (Yukon) Ltd. | XGM-9-85 | 85-05-01 | Transportation equipment | 27 500 |
| ICG Transmission Holdings Ltd. | XGM-18-85 | 85-08-21 | Replacement of metering components | 140 100 |
| TransCanada PipeLines Limited | XGM-3-85 | 85-02-13 | Pipe replacement, compressor station and metering modifications, and general plant. | 31 208 000 |
| TransCanada PipeLines Limited | XGM-4-85 | 85-02-27 | Pipe replacement, compression and metering facilities | 4 863 000 |
| TransCanada PipeLines Limited | XGM-5-85 | 85-03-13 | Office improvements and transportation equipment | 1 140 000 |
| TransCanada PipeLines Limited | XGM-7-85 | 85-04-11 | Pipe replacement | Not identified |
| TransCanada PipeLines Limited | XGM-10-85 | 85-05-01 | Pipe replacement | Not identified |
| TransCanada PipeLines Limited | XGM-12-85 | 85-06-12 | Pipe replacement and station improvements | 1 683 000 |
| TransCanada PipeLines Limited | XGM-16-85 | 85-07-17 | Pipe replacement | Not identified |
| TransCanada PipeLines Limited | XGM-20-85 | 85-08-28 | Station modifications, etc. | 626 000 |
| Trans Québec & Maritimes Pipeline Inc. | XGM-6-85 | 85-04-03 | Station improvements and right-of-way protection | 273 300 |
| Trans Québec & Maritimes Pipeline Inc. | XGM-14-85 | 85-06-26 | Transportation equipment, work equipment, etc. | 115 000 |
| Trans Québec & Maritimes Pipeline Inc. | XGM-22-85 | 85-12-05 | Telemetry and control building | 181 000 |
| Westcoast Transmission Company Limited | XGM-2-85 | 85-02-13 | Station and plant modifications, office services | 323 400 |
| Westcoast Transmission Company Limited | XGM-8-85 | 85-05-01 | Pipe replacement, station and plant modifications | Not identified |

Gas

2. (cont'd) Orders Issued During 1985 Approving Modifications and Additions to Existing Gas Pipeline Facilities

| Applicant | Order No. | Issued | Facilities | Estimated Cost(\$) |
|--|-------------|----------|---|--------------------|
| Westcoast Transmission Company Limited | XGM-11-85 | 85-05-23 | Metering facilities | Not identified |
| Westcoast Transmission Company Limited | XGM-13-85 | 85-07-04 | Compressor station projects, plant modifications and additions, etc. | 5 528 000 |
| Westcoast Transmission Company Limited | XGM-15-85 | 85-07-04 | Valve operators | 260 000 |
| Westcoast Transmission Company Limited | XGM-17-85 | 85-08-21 | Compressor station and plant modifications, mobile equipment, etc. | 602 000 |
| Westcoast Transmission Company Limited | XGM-19-85 | 85-09-11 | Tie-in Alberta & Boundary lake pipelines to NGL meter station, compressor station modifications | 474 000 |
| Westcoast Transmission Company Limited | XGM-21-85 | 85-10-23 | Compressor station and plant modifications, mobile equipment, therm-titration, etc. | 1 027 000 |
| Westcoast Transmission Company Limited | GPL-W5-1-85 | 85-02-07 | Mainline replacements | 811 000 |
| Westcoast Transmission Company Limited | GPL-W5-2-85 | 85-04-17 | Mainline and loopline replacements | 41 023 000 |
| Westcoast Transmission Company Limited | GPL-W5-3-85 | 85-05-03 | Loopline replacements | |

Gas

3. Licences and Long-Term Orders to Export Natural Gas as at 31 December 1985

| Exporter | Licence or Order Number | Point of Export | Term of Licence or Order | | Maximum Volumes | | |
|---------------------------------------|-------------------------|--|--------------------------|----------|--------------------------------|---------------------------------|-------------------------------|
| | | | From | To | Daily (10^3m^3) | Annual (10^6m^3) | Term (10^6m^3) |
| 1. Alberta & Southern Gas Co. Ltd. | GL-3 | Kingsgate, B.C. | 61-10-31 | 86-10-30 | 12 995.4 | 4 341.8 | 109 467.8 |
| | | | 86-10-31 | 87-10-31 | 3 248.9 | 1 085.5 | |
| | GL-16 | | 66-11-01 | 67-10-31 | 3 204.6 | 1 059.9 | 45 721.1 |
| | | | 67-11-01 | 89-10-31 | 6 409.2 | 2 119.8 | |
| | GL-24 | | 68-11-01 | 69-10-31 | 3 427.7 | 1 102.0 | 52 491.0 |
| | | | 69-11-01 | 91-10-31 | 6 685.4 | 2 206.7 | |
| | | | 91-11-01 | 92-10-31 | 4 784.6 | 1 577.4 | |
| | | | 92-11-01 | 93-10-31 | 3 835.6 | 1 263.4 | |
| | GL-35 | | 70-11-01 | 87-10-31 | 5 807.2 | 1 192.1 | 32 506.2 |
| | GL-67 | | 86-11-01 | 87-10-31 | 12 995.4 | 3 256.3 | 20 619.1 |
| | | | 87-11-01 | 90-10-31 | 12 995.4 | 4 341.8 | |
| | | | 90-11-01 | 91-10-31 | 8 654.9 | 2 891.6 | |
| | | | 91-11-01 | 92-10-31 | 4 327.5 | 1 445.8 | |
| | GL-68 | | 89-11-01 | 90-10-31 | 6 409.2 | 2 119.8 | 4 237.5 |
| | | | 90-11-01 | 91-10-31 | 4 268.5 | 1 411.8 | |
| | | | 91-11-01 | 91-10-31 | 2 134.3 | 705.9 | |
| | GL-69 | | 87-11-01 | 90-10-31 | 5 807.2 | 1 912.1 | 7 646.4 |
| | | | 90-11-01 | 91-10-31 | 3 867.6 | 1 273.4 | |
| | | | 91-11-01 | 92-10-31 | 1 933.8 | 636.7 | |
| 2. Canadian Montana Pipe Line Company | GL-5 | Cardston, Alta., Emerson Man. & Niagara Falls, Ont. | 61-10-31 | 86-10-30 | 1 019.8 | 310.2 | 7 832.3 |
| | | | 86-10-31 | 87-10-31 | 255.0 | 77.6 | |
| | GL-17 | | 66-11-01 | 67-10-31 | 339.9 | 103.4 | 4 652.8 |
| | | | 67-11-01 | 89-10-31 | 679.9 | 206.8 | |
| | GL-25 | | 68-11-01 | 69-10-31 | 339.9 | 103.4 | 4 905.4 |
| | | | 69-11-01 | 91-10-31 | 679.9 | 206.8 | |
| | | | 91-11-01 | 92-10-31 | 439.0 | 133.6 | |
| | | | 92-11-01 | 93-10-31 | 390.9 | 119.0 | |
| | GL-36 | | 70-11-01 | 85-10-31 | 339.9 | 103.4 | 1 628.5 |
| | | | 85-11-01 | 86-10-31 | 170.0 | 51.7 | |
| | | | 86-11-01 | 87-10-31 | 85.0 | 25.9 | |
| 3. Interprovincial Pipe Line Company | GL-52 | Aden, Alta. | 80-01-01 | 83-03-31 | 1 416.4 | 283.3 | 2 266.4 |
| | | | 83-04-01 | 87-12-31 | 1 133.1 | 283.3 | |
| | GL-53 | Cardston, Alta., Emerson, Man. & Niagara Falls, Ont. | 86-07-01 | 86-10-31 | 340.0 | 34.5 | 86.2 |
| | | | 86-11-01 | 87-10-31 | 170.0 | 51.7 | |
| | GO-3-79 | Reagan Field, Alta. | 79-05-01 | 93-12-31 | 30.0 | 10.3 | 105.0 |
| 4. Trans-Canada Pipe Lines Ltd. | GL-70 | Niagara Falls, Ont. | 86-11-01 | 87-10-31 | 637.4 | 193.9 | 814.1 |
| | | | 87-11-01 | 90-10-31 | 509.9 | 155.1 | |
| | | | 90-11-01 | 91-10-31 | 339.6 | 103.3 | |
| | | | 91-11-01 | 92-10-31 | 169.8 | 51.6 | |
| 5. Western Canada Pipe Lines Ltd. | GL-71 | Niagara Falls, Ont. | 89-11-01 | 90-10-31 | 340.0 | 103.4 | 206.7 |
| | | | 90-11-01 | 91-10-31 | 226.4 | 68.9 | |
| | | | 91-11-01 | 92-10-31 | 113.2 | 34.4 | |

Gas

3. (cont'd) Licences and Long-Term Orders to Export Natural Gas as at 31 December 1985

| Exporter | Licence or Order Number | Point of Export | Term of Licence or Order | | Maximum Volumes | | |
|--|-------------------------|---|--------------------------|------------|---|--|--|
| | | | From | To | Daily (10 ³ m ³) | Annual (10 ⁶ m ³) | Term (10 ⁶ m ³) |
| | GL-72 | Aden, Alta. | 88-01-01 | 88-10-31 | 1 133.1 | 236.1 | 1 085.7 |
| | | | 88-11-01 | 90-10-31 | 1 133.1 | 283.3 | |
| | | | 90-11-01 | 91-10-31 | 754.6 | 188.7 | |
| | | | 91-11-01 | 92-10-31 | 377.3 | 94.3 | |
| 3. Columbia Gas Development of Canada Ltd. | GL-54 | Monchy, Sask. | 83-04-01 | 83-12-31 | 1 450.0 | 387.7 | 3 556.1 |
| | | | 84-01-01 | 87-12-31 | 1 450.0 | 517.0 | |
| | | Huntingdon, B.C. | 80-01-01 | 81-10-31 | 1 110.4 | 368.3 | |
| | | | 81-11-01 | 81-12-31 | 1 450.0 | 70.8 | |
| | | | 82-01-01 | 83-03-31 | 1 450.0 | 423.5 | |
| | GL-74 | Monchy, Sask. | 88-01-01 | 88-10-31 | 1 450.0 | 430.8 | 1 981.3 |
| | | | 88-11-01 | 90-10-31 | 1 450.0 | 517.0 | |
| | | | 90-11-01 | 91-10-31 | 965.7 | 344.3 | |
| | | | 91-11-01 | 92-10-31 | 482.8 | 172.2 | |
| 4. Consolidated Natural Gas Ltd. | GL-44 ^a | Emerson, Man. | 72-03-15 | 92-10-31 | 4 249.2 | 1 274.8 | 18 951.3 |
| | GL-61 | Emerson, Man. and Monchy, Sask. | 80-11-01 | 85-10-31 | 5 665.6 | 2 067.9 | 13 389.6 |
| | | Combined Maximum | 85-11-01 | 86-10-31 | 4 532.5 | 1 654.0 | |
| | | | 86-11-01 | 87-10-31 | 3 824.3 | 1 396.0 | |
| | | Maximum permitted at Monchy, Sask. as part of combined Emerson/Monchy volumes | 81-11-01 | 84-10-31 | 3 232.9 | 1 180.0 | 7 278.9 |
| | | | 84-11-01 | 85-10-31 | 3 891.1 | 1 438.4 | |
| | | | 85-11-01 | 86-10-31 | 3 682.6 | 1 344.0 | |
| | | | 86-11-01 | 87-10-31 | 2 620.3 | 956.5 | |
| | GL-75 | | 87-11-01 | 89-10-31 | 3 824.3 | 1 396.0 | 2 792.0 |
| | | | 87-11-01 | 89-10-31 | 1 912.2 | 698.0 | 1 396.0 |
| 5. Canada LNG Corp. | GL-76 | Port Simpson Bay, B.C. | 86-04-01 | 86-12-31 | N/S | 2 258.0 | 62 761.0 |
| | | | 87-01-01 | 87-12-31 | N/S | 3 309.0 | |
| | | | 88-01-01 | 88-12-31 | N/S | 3 986.0 | |
| | | | 89-01-01 | 89-12-31 | N/S | 4 136.0 | |
| | | | 90-01-01 | 2000-12-31 | N/S | 4 362.0 | |
| | | | 2001-01-01 | 2001-03-31 | N/S | 1 090.0 | |
| 6. ICG Transmission Holdings Ltd. | GL-28 | Sprague, Man. | 70-11-01 | 95-10-31 | 80.3 | 9.5 | 229.0 |
| | GL-29 | Fort Frances, Ont. | 70-11-01 | 95-10-31 | 915.6 | 218.5 | 5 462.2 |
| | GL-30 ^b | Sprague, Man. | 70-11-01 | 95-10-31 | 1 321.8 | 344.0 | 8 498.1 |
| 7. KannGaz Producers Ltd. | GL-77 | Niagara Falls, Ont. | 84-11-01 | 93-10-31 | 3 540.0 | 1 292.1 | 13 567.0 |
| | | | 93-11-01 | 94-10-31 | 2 655.0 | 969.1 | |
| | | | 94-11-01 | 95-10-31 | 1 770.0 | 646.0 | |
| | | | 95-11-01 | 96-10-31 | 885.0 | 323.0 | |
| 8. Niagara Gas Transmission Ltd. | GL-55 | Cornwall, Ont. | 80-01-01 | 82-10-31 | 350.0 | 89.1 | 1 500.2 |
| | | | 82-11-01 | 83-03-31 | 350.0 | 37.1 | |
| | | | 83-04-01 | 83-10-31 | 1 200.0 | 145.8 | |
| | | | 83-11-01 | 85-10-31 | 1 200.0 | 250.0 | |
| | | | 85-11-01 | 87-10-31 | 1 200.0 | 275.0 | |
| | GL-78 | | 87-11-01 | 90-10-31 | 1 200.0 | 275.0 | 1 099.7 |
| | | | 90-11-01 | 91-10-31 | 799.2 | 183.1 | |
| | | | 91-11-01 | 92-10-31 | 399.2 | 91.6 | |

Gas

3. (cont'd) Licences and Long-Term Orders to Export Natural Gas as at 31 December 1985

| Exporter | Licence or Order Number | Point of Export | Term of Licence or Order | | Maximum Volumes | | |
|--------------------------------|--|---|--------------------------|----------|--|---|---|
| | | | From | To | Daily (10 ³ m ³) | Annual (10 ⁶ m ³) | Term (10 ⁶ m ³) |
| 9. Pan-Alberta Gas Ltd. | GL-95 | Niagara Falls, Ont. | 84-11-01 | 93-10-31 | 4 332.5 | 1 581.4 | 16 604.7 |
| | | | 93-11-01 | 94-10-31 | 3 249.4 | 1 186.0 | |
| | | | 94-11-01 | 95-10-31 | 2 166.2 | 790.7 | |
| | | | 95-11-01 | 96-10-31 | 1 083.1 | 395.4 | |
| | GL-96 (Consolidation of GL-59, 63 & 65) | Kingsgate, B.C. | 84-11-01 | 85-10-31 | 7 478.6 | 2 488.3 | 27 990.9 |
| | | | 85-11-01 | 94-10-31 | 7 478.6 | 2 488.3 | |
| | | | 94-11-01 | 95-10-31 | 4 980.7 | 1 657.2 | |
| | | | 95-11-01 | 96-10-31 | 2 490.7 | 828.6 | |
| | GL-97 (Consolidation of GL-58, 62 & 66) | Monchy, Sask. | 84-11-01 | 85-10-31 | 24 928.5 | 8 294.4 | 82 935.7 |
| | | | 85-11-01 | 94-10-31 | 24 928.5 | 8 294.4 | |
| | | | 94-11-01 | 95-10-31 | 16 602.4 | 5 524.1 | |
| | | | 95-11-01 | 96-10-31 | 8 301.2 | 2 762.0 | |
| 10. ProGas Ltd. | GL-56 | Emerson, Man. and Monchy, Sask. Combined Maximum | 80-11-01 | 85-10-31 | 9 440.9 | 3 100.0 | 17 050.0 |
| | | | 85-11-01 | 86-10-31 | 7 552.7 | 2 480.0 | |
| | | | 86-11-01 | 87-10-31 | 5 664.5 | 1 860.0 | |
| | | | 81-11-01 | 82-10-31 | 2 613.7 | 954.0 | 10 100.7 |
| | | | 82-11-01 | 84-10-31 | 4 849.4 | 1 770.0 | |
| | Maximum permitted at Monchy, Sask. as part of combined Emerson/Monchy Volumes | | 84-11-01 | 85-10-31 | 6 457.6 | 2 357.0 | |
| | | | 85-11-01 | 86-10-31 | 6 797.4 | 2 480.0 | |
| | | | 86-11-01 | 87-10-31 | 5 098.1 | 1 860.0 | |
| | | | 87-11-01 | 88-10-31 | 5 664.5 | 1 860.0 | 1 860.0 |
| | | | 88-11-01 | 89-10-31 | 3 776.4 | 1 240.0 | |
| | GL-79 | Emerson, Man. and Monchy, Sask. Combined Maximum | 87-11-01 | 88-10-31 | 3 398.8 | 1 240.0 | 1 674.0 |
| | | | 88-11-01 | 89-10-31 | 1 699.4 | 620.0 | |
| | GL-80 | Niagara Falls, Ont. | 84-11-01 | 93-10-31 | 1 420.0 | 518.3 | 5 442.1 |
| | | | 93-11-01 | 94-10-31 | 1 065.0 | 388.7 | |
| | | | 94-11-01 | 95-10-31 | 710.0 | 259.1 | |
| | | | 95-11-01 | 96-10-31 | 355.0 | 129.6 | |
| | GL-81 | Emerson, Man. | 83-11-01 | 92-10-31 | 5 270.0 | 1 923.5 | 20 196.7 |
| | | | 92-11-01 | 93-10-31 | 3 952.5 | 1 442.6 | |
| | | | 93-11-01 | 94-10-31 | 2 635.0 | 961.7 | |
| | | | 94-11-01 | 95-10-31 | 1 317.5 | 480.9 | |
| 11. Sulpetro Ltd. | GL-82 | | 83-11-01 | 87-10-31 | 2 125.0 | 775.6 | 4 653.7 |
| | | | 87-11-01 | 88-10-31 | 1 700.0 | 620.5 | |
| | | | 88-11-01 | 89-10-31 | 1 275.0 | 465.4 | |
| | | | 89-11-01 | 90-10-31 | 850.0 | 310.2 | |
| | | | 90-11-01 | 91-10-31 | 425.0 | 155.1 | |
| 12. Tenneco LNG Inc. | GL-49 | St. Stephen, N.B. | | c | 32 295.0 | 11 820.0 | c |
| 13. TransCanada PipeLines Ltd. | GL-18 | Emerson, Man. | 65-11-01 | 66-10-31 | 708.2 | 226.6 | 33 993.4 |
| | | | 66-11-01 | 89-10-31 | 4 277.5 | 1 481.5 | |
| | GL-19 | Philipsburg, Qué. | 65-11-01 | 82-10-31 | 600.6 | 184.1 | 3 059.4 |
| | | | 82-11-01 | 83-10-31 | 634.5 | 184.1 | |
| | | | 83-11-01 | 84-10-31 | 657.2 | 184.1 | |
| | | | 84-11-01 | 85-10-31 | 679.9 | 184.1 | |
| | | | 85-11-01 | 86-10-31 | 702.5 | 184.1 | |
| | | | 86-11-01 | 89-10-31 | 725.2 | 184.1 | |
| | GL-20 | Emerson, Man. | 67-11-01 | 91-10-31 | 2 662.8 | 909.3 | 21 670.8 |

Gas

3. (cont'd) Licences and Long-Term Orders to Export Natural Gas as at 31 December 1985

| Exporter | Licence or Order Number | Point of Export | Term of Licence or Order | | Maximum Volumes | | |
|--|-------------------------|--|--------------------------|----------|-------------------------------|--------------------------------|------------------------------|
| | | | From | To | Daily (10^3m^3) | Annual (10^6m^3) | Term (10^6m^3) |
| | GL-21 ^d | | 68-11-05 | 91-10-31 | N/S | 7 019.1 | 169 967.0 |
| | GL-37 | | 70-11-01 | 90-10-31 | 5 546.6 | 2 030.1 | 40 601.0 |
| | GL-38 | | 70-11-01 | 90-10-31 | 1 416.4 | 518.4 | 10 368.0 |
| | GL-39 | | 70-11-01 | 90-10-31 | 204.0 | 74.6 | 1 493.0 |
| | GL-42 ^d | | 71-04-15 | 71-10-31 | N/S | 323.8 | 60 316.5 |
| | | | 71-11-01 | 94-10-31 | N/S | 2 612.3 | |
| | GL-43 | | 71-11-01 | 91-10-31 | N/S | 481.6 | 9 631.5 |
| | GL-60 | | 80-01-01 | 80-10-31 | 6 317.1 | 800.0 | 10 896.4 |
| | | | 80-11-01 | 84-10-31 | 6 317.1 | 2 096.3 | |
| | | | 84-11-01 | 85-10-31 | 4 737.8 | 1 572.2 | |
| | | | 85-11-01 | 85-12-14 | 3 158.6 | 139.0 | |
| | GL-83 | Niagara Falls, Ont. | 84-11-01 | 86-10-31 | 1 133.1 | 414.0 | 9 350.2 |
| | | | 86-11-01 | 94-10-31 | 2 620.3 | 959.0 | |
| | | | 94-11-01 | 95-10-31 | 1 521.3 | 556.8 | |
| | | | 95-11-01 | 96-10-31 | 774.3 | 283.4 | |
| | GL-84 | | 84-11-01 | 93-10-31 | 1 416.4 | 518.4 | 5 054.4 |
| | | | 93-11-01 | 94-10-31 | 1 062.3 | 388.8 | |
| | GL-85 | | 84-11-01 | 93-10-31 | 2 832.8 | 1 036.8 | 10 108.8 |
| | | | 93-11-01 | 94-10-31 | 2 124.6 | 777.6 | |
| | GL-86 | Emerson, Man. | 84-11-01 | 93-10-31 | 2 832.8 | 1 036.8 | 10 886.4 |
| | | | 93-11-01 | 94-10-31 | 2 124.6 | 777.6 | |
| | | | 94-11-01 | 95-10-31 | 1 416.4 | 518.4 | |
| | | | 95-11-01 | 96-10-31 | 708.2 | 259.2 | |
| | GL-87 | | 84-11-01 | 93-10-31 | 2 832.8 | 1 036.8 | 10 886.4 |
| | | | 93-11-01 | 94-10-31 | 2 124.6 | 777.6 | |
| | | | 94-11-01 | 95-10-31 | 1 416.4 | 518.4 | |
| | | | 95-11-01 | 96-10-31 | 708.2 | 259.2 | |
| | GL-88 | Emerson, Man. and/or Niagara Falls, Ont. | 84-11-01 | 93-10-31 | 4 249.2 | 1 555.2 | 16 329.6 |
| | | | 93-11-01 | 94-10-31 | 3 186.9 | 1 166.4 | |
| | | | 94-11-01 | 95-10-31 | 2 124.6 | 777.6 | |
| | | | 95-11-01 | 96-10-31 | 1 062.2 | 388.8 | |
| | GL-89 | Emerson, Man. | 84-11-01 | 85-10-31 | 6 317.1 | 524.1 | 12 960.8 |
| | | | 85-11-01 | 86-10-31 | 6 317.1 | 1 957.3 | |
| | | | 86-11-01 | 90-10-31 | 6 317.1 | 2 096.3 | |
| | | | 90-11-01 | 91-10-31 | 4 207.2 | 1 396.1 | |
| | | | 91-11-01 | 92-10-31 | 2 103.6 | 698.1 | |
| | GL-90 | Niagara Falls, Ont. | 85-11-01 | 94-10-31 | 1 416.4 | 518.4 | 5 443.2 |
| | | | 94-11-01 | 95-10-31 | 1 062.3 | 388.8 | |
| | | | 95-11-01 | 96-10-31 | 708.2 | 259.2 | |
| | | | 96-11-01 | 97-10-31 | 354.1 | 129.6 | |
| 14. Transcontinental Gas Pipe Line Corp. | GL-91 ^e | Niagara Falls, Ont. | 84-11-01 | 93-10-31 | 8 498.4 | 1 555.2 | 16 329.6 |
| | | | 93-11-01 | 94-10-31 | 6 373.8 | 1 166.4 | |
| | | | 94-11-01 | 95-10-31 | 4 249.2 | 777.6 | |
| | | | 95-11-01 | 96-10-31 | 2 124.6 | 388.8 | |

Gas

3. (cont'd) Licences and Long-Term Orders to Export Natural Gas as at 31 December 1985

| Exporter | Licence or Order Number | Point of Export | Term of Licence or Order | | Maximum Volumes | | |
|---|-------------------------|--|--------------------------|----------|--|---|---|
| | | | From | To | Daily (10 ³ m ³) | Annual (10 ⁶ m ³) | Term (10 ⁶ m ³) |
| 15. Union Gas Ltd. | GL-64 | Windsor, Ont. | 80-11-01 | 85-10-31 | 1 100.0 | 284.0 | 1 420.0 |
| | GL-92 | | 85-11-01 | 90-10-31 | 1 100.0 | 284.0 | 1 703.7 |
| 16. Westcoast Transmission Company Ltd. | GL-4 | Kingsgate, B.C. | 90-11-01 | 91-10-31 | 732.6 | 189.1 | |
| | | | 91-11-01 | 92-10-31 | 366.3 | 94.6 | |
| | | | 61-12-10 | 81-12-09 | 4 305.8 | 1 444.7 | 35 250.9 |
| | | | 81-12-10 | 82-10-31 | 4 305.8 | 1 300.0 | |
| | | | 82-11-01 | 84-10-31 | 4 305.8 | 1 444.7 | |
| | | | 84-11-01 | 85-10-31 | 3 229.4 | 1 083.5 | |
| | | | 85-11-01 | 86-10-31 | 2 152.9 | 722.4 | |
| | GL-41 | Huntingdon, B.C. Kingsgate, B.C. & Monchy, Sask. | 86-11-01 | 87-10-31 | 1 076.5 | 361.2 | |
| | | | 71-11-01 | 72-10-31 | 20 773.9 | 7 223.1 | 143 495.2 |
| | | | 72-11-01 | 80-10-31 | 22 922.9 | 7 970.3 | |
| | | | 80-11-01 | 83-03-31 | 24 622.6 | 7 970.3 | |
| | | | 83-04-01 | 83-10-31 | 26 039.0 | 4 706.2 | |
| | | | 83-11-01 | 89-10-31 | 26 039.0 | 8 067.8 | |
| | | | 89-11-01 | 92-10-31 | 8 498.3 | 3 101.9 | 13 958.5 |
| | | | 92-11-01 | 93-10-31 | 6 373.7 | 2 326.4 | |
| | | | 93-11-01 | 94-10-31 | 4 249.1 | 1 550.9 | |
| | | | 94-11-01 | 95-10-31 | 2 124.6 | 775.5 | |
| | GL-93 | Huntingdon, B.C. Kingsgate, B.C. and Monchy, Sask. Combined Maximum Maximum permitted at Monchy, Sask. as part of Combined Huntingdon/ Kingsgate/Monchy Volumes | 89-11-01 | 90-10-31 | 13 731.0 | 4 637.1 | 9 269.5 |
| | | | 90-11-01 | 91-10-31 | 9 144.8 | 3 088.3 | |
| | | | 91-11-01 | 92-10-31 | 4 572.4 | 1 544.1 | |
| | | | 89-11-01 | 90-10-31 | 1 416.4 | 517.0 | |
| | | | 90-11-01 | 91-10-31 | 1 416.4 | 517.0 | |
| | | | 91-11-01 | 92-10-31 | 1 416.4 | 517.0 | |
| | | | 89-11-01 | 90-10-31 | 2 832.8 | N/S | |
| | | | 90-11-01 | 91-10-31 | 2 832.8 | N/S | |
| | | | 91-11-01 | 92-10-31 | 2 832.8 | N/S | |
| | | | | | | | |

- a— This licence authorizes the export of natural gas which the licensee has imported near Willow Creek, Sask. pursuant to licence GLI-5.
- b— This licence authorizes an export near Sprague, Manitoba for import near Rainy River, Ont.
- c— This licence is to commence on the date of initial delivery and expire 20 1/2 years after, or a total term not exceeding 25 years. The liquefied natural gas exported will have been previously imported by the licensee near Saint John, New Brunswick pursuant to Licence GLI-7.
- d— This licence authorizes an export near Emerson, Manitoba for import near Sault Ste Marie and Sarnia, Ontario, to serve the eastern Canadian market.
- e— This licence authorizes the export of natural gas previously imported and stored in Canada.

N/S Not Specified.

Gas

4. Licences and Long-Term Orders to Export Propane, Butanes, Ethane and Ethylene as at 31 December 1985 (Cubic Metres)

| Importer | Licence or Order Number | Point of Import | Term of Licence or Order From | To | Maximum Volumes |
|--|-------------------------|--|--|--|--|
| PROPANE | | | | | |
| 1. Amoco Canada Petroleum Company Ltd. | GL-32 | Any point on the international boundary between Canada and the United States. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 | 92 698 92 698 77 206 |
| | EPR-918-79 ^a | Same as GL-32 | 79-09-06 | 96-01-31 | N/S |
| 2. Dome Petroleum Ltd. | GL-31 | Same as GL-32 | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 | 716 983 688 571 656 190 620 476 133 254 133 254 133 254 133 254 143 809 193 016 196 984 169 047 165 873 165 079 162 098 103 968 |
| | EPR-917-79 ^a | Same as GL-32 | 79-09-06 | 96-01-31 | N/S |
| | EPR-930-84 ^b | Any point in the Province of Ontario on the international boundary between Canada and the United States. | 84-04-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 | 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-04-15 | 458 335 608 335 608 335 608 335 608 335 608 335 608 335 608 335 153 100 |

Gas

4. (cont'd) Licences and Long-Term Orders to Export Propane, Butanes, Ethane and Ethylene as at 31 December 1985 (Cubic Metres)

| Importer | Licence or Order Number | Point of Import | Term of Licence or Order From | To | Maximum Volumes |
|--|-------------------------|-----------------|--|--|---|
| 3. Imperial Oil Ltd. | EPR-922-80 ^a | Gretna, Man. | 80-09-01 | 90-08-31 | N/S |
| 4. PanCanadian Gas Products Ltd. | GL-34 | Same as GL-32 | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 | 63 730 63 730 63 730 63 730 63 730 63 730 63 730 53 175 3 968 |
| | EPR-919-79 ^a | Same as GL-32 | 79-06-06 | 91-01-31 | N/S |
| BUTANES | | | | | |
| 5. Amoco Canada Petroleum Company Ltd. | EBU-133-74 ^a | Gretna, Man. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 95-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 95-12-31 | 618 088 575 893 540 176 488 674 423 848 374 315 359 244 308 345 260 131 239 549 205 008 179 455 163 527 135 973 122 506 95 286 91 062 |
| 6. Dome Petroleum Ltd. | EBU-132-74 ^a | Gretna, Man. | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 93-01-01 94-01-01 95-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 93-12-31 94-12-31 95-12-31 | 603 129 580 324 556 375 532 601 502 284 452 037 437 093 402 186 352 812 341 711 315 460 299 627 290 273 272 057 265 117 245 012 239 724 |

Gas

4. (cont'd) Licences and Long-Term Orders to Export Propane, Butanes, Ethane and Ethylene as at 31 December 1985 (Cubic Metres)

| Importer | Licence or Order Number | Point of Import | Term of Licence or Order | From | To | Maximum Volumes |
|----------------------------------|-------------------------|---|--------------------------|--|--|--|
| | EBU-929-84 ^a | Any point in the Province of Ontario on the international boundary between Canada and the United States | | 84-04-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 91-01-01 92-01-01 | 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 91-12-31 92-12-31 | 340 650 425 135 425 135 425 135 425 135 425 135 425 135 425 135 128 825 |
| 7. Imperial Oil Ltd. | EBU-911-80 ^a | Gretna, Man. | | 80-09-01 | 90-08-31 | N/S |
| 8. PanCanadian Gas Products Ltd. | EBU-134-74 ^a | Gretna, Man. | | 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 86-01-01 87-01-01 88-01-01 89-01-01 90-01-01 | 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 86-12-31 87-12-31 88-12-31 89-12-31 90-12-31 | 213 822 213 822 213 822 213 822 213 822 240 550 240 550 240 550 240 550 240 550 240 550 240 550 |
| 9. Texaco Canada Inc. | EBU-916-82 ^a | Gretna, Man. | | 82-07-01 | 92-06-30 | N/S |
| 10. Dome Petroleum Ltd. | GL-47 | Elmore, Sask. and Windsor, Ont. | | 78-08-15 79-01-01 80-01-01 81-01-01 82-01-01 83-01-01 84-01-01 85-01-01 | 78-12-31 79-12-31 80-12-31 81-12-31 82-12-31 83-12-31 84-12-31 85-12-31 | 835 298 2 211 664 2 195 866 2 053 688 1 563 962 1 405 986 1 184 820 458 130 |
| | GO-1-76 ^a | Elmore, Sask. | | 78-01-01 | 85-12-31 | 3 949 m ³ /year |
| | GL-51 | Elmore, Sask. Windsor, Ont. | | 79-06-21 | 93-12-31 | 19 069 000 |
| ETHYLENE | | | | | | |
| 11. Dow Chemical of Canada Ltd. | EYL-1-76 | Elmore, Sask. Sarnia and Windsor, Ont. | | 80-01-01 | 89-12-31 | 158 757 340 kg/year |
| | EYL-2-76 ^a | Elmore, Sask. | | 78-01-01 | 97-12-31 | 181 438 810 kg/year |

a — This licence/order authorizes an export of product for subsequent import.

b — This is an import-export licence/order whereby product exported has been previously imported.

N/S Not Specified

Gas

5. Licences and Long-Term Orders to Import Natural Gas as at 31 December 1985

| Importer | Licence or Order Number | Point of Import | Term of Licence or Order | | Maximum Volumes | | |
|--|-------------------------|----------------------------------|--------------------------|----------------------|---|--|--|
| | | | From | To | Daily (10 ³ m ³) | Annual (10 ⁶ m ³) | Term (10 ⁶ m ³) |
| 1. Border Utilities Ltd. | GO-2-66 | Coutts, Alta. | 66-06-02 | 85-09-14 | 30.0 | N/S | N/S |
| 2. Canadian Western Natural Gas Co. Ltd. | GO-6-66 | Coutts, Alta. | 66-09-22 | 85-09-14 | 30.0 | N/S | N/S |
| | GO-6-84 | | 84-11-01 | 85-10-31 | N/S | 3.4 | 3.4 |
| | GO-5-85 | | 85-11-01 | 86-09-15 | N/S | N/S | 3.4 |
| 3. Consolidated Natural Gas Ltd. | GLI-5 ^a | Willow Creek, Sask. | 71-03-15 | 92-10-31 | 4 249.2 | 1 274.8 | 18 951.3 |
| 4. ICG Transmission Limited | GL-30 ^b | Rainy River, Ont. | 70-11-01 | 95-10-31 | 1 321.8 | 344.0 | 8 498.1 |
| 5. Tenneco LNG Inc. | GLI-7 | Saint John, N.B. | c | c | N/S | 418.68PJ | 8 373.6PJ |
| 6. TransCanada PipeLines Ltd. | GL-21 ^b | Sault Ste-Marie and Sarnia, Ont. | 68-11-05 | 91-10-31 | N/S | 7 019.1 | 169 967.0 |
| | GL-42 ^d | | 71-04-15 71-11-01 | 71-10-31 94-10-21 | N/S N/S | 232.8 2 612.3 | 60 316.5 |
| 7. Transcontinental Gas Pipe Line Corp. | GL-91 ^e | Sarnia, Ont. | 84-11-01 | 93-10-31 | 4 249.0 | 1 555.2 | |
| | | | 93-11-01 | 94-10-31 | 3 156.9 | 1 166.4 | |
| | | | 94-11-01 | 95-10-31 | 2 124.6 | 777.6 | |
| | | | 95-11-01 | 96-10-31 | 1 062.3 | 388.8 | 16 329.6 |

a — This licence authorizes an import of natural gas which the licensee will subsequently export near Emerson, Manitoba, pursuant to licence GL-44.

b — This licence authorizes an import of natural gas which the licensee has exported near Sprague, Man.

c — This licence is to commence on the date of initial delivery and expire 20 1/2 years after, or a total term not exceeding 25 years. This liquefied natural gas hereby imported is to be subsequently exported near St. Stephen, New Brunswick, pursuant to licence GL-49.

d — This licence authorizes an import of natural gas which the licensee has previously exported near Emerson, Manitoba. This natural gas serves Canadian markets.

e — This licence authorizes an import of natural gas for storage in Canada and subsequently exported to the United States.

N/S Not Specified.

Gas

6. Licences and Long-Term Orders to Import Propane, Butanes, Ethane and Ethylene as at 31 December 1985 (Cubic Metres)

| Importer | Licence or Order Number | Point of Import | Term of Licence or Order From | To | Maximum Volumes |
|--|-------------------------|--|-------------------------------|----------|-----------------|
| PROPANE | | | | | |
| 1. Amoco Canada Petroleum Company Ltd. | EPR-918-79 ^a | Any point on the international boundary between Canada and the United States | 79-09-06 | 96-01-31 | N/S |
| BUTANES | | | | | |
| 2. Amoco Canada Petroleum Company Ltd. | EBU-133-74 ^a | Sarnia, Ont. | 79-01-01 | 79-12-31 | 618 088 |
| | | | 80-01-01 | 80-12-31 | 575 893 |
| | | | 81-01-01 | 81-12-31 | 540 176 |
| | | | 82-01-01 | 82-12-31 | 488 674 |
| | | | 83-01-01 | 83-12-31 | 423 158 |
| | | | 84-01-01 | 84-12-31 | 374 315 |
| | | | 85-01-01 | 85-12-31 | 359 244 |
| | | | 86-01-01 | 86-12-31 | 308 345 |
| | | | 87-01-01 | 87-12-31 | 260 131 |
| | | | 88-01-01 | 88-12-31 | 239 549 |
| | | | 89-01-01 | 89-12-31 | 205 008 |
| | | | 90-01-01 | 90-12-31 | 179 455 |
| | | | 91-01-01 | 91-12-31 | 163 527 |
| | | | 92-01-01 | 92-12-31 | 135 973 |
| | | | 93-01-01 | 93-12-31 | 122 506 |
| | | | 94-01-01 | 94-12-31 | 95 286 |
| | | | 95-01-01 | 95-12-31 | 91 062 |
| 3. Dome Petroleum Ltd. | EBU-132-74 ^a | Sarnia, Ont. | 79-01-01 | 79-12-31 | 603 129 |
| | | | 80-01-01 | 80-12-31 | 580 324 |
| | | | 81-01-01 | 81-12-31 | 556 375 |
| | | | 82-01-01 | 82-12-31 | 532 601 |
| | | | 83-01-01 | 83-12-31 | 502 284 |
| | | | 84-01-01 | 84-12-31 | 452 037 |
| | | | 85-01-01 | 85-12-31 | 437 093 |
| | | | 86-01-01 | 86-12-31 | 402 186 |
| | | | 87-01-01 | 87-12-31 | 352 812 |
| | | | 88-01-01 | 88-12-31 | 341 711 |
| | | | 89-01-01 | 89-12-31 | 315 460 |
| | | | 90-01-01 | 90-12-31 | 299 627 |
| | | | 91-01-01 | 91-12-31 | 290 273 |
| | | | 92-01-01 | 92-12-31 | 272 057 |
| | | | 93-01-01 | 93-12-31 | 265 117 |
| | | | 94-01-01 | 94-12-31 | 245 012 |
| | | | 95-01-01 | 95-12-31 | 239 724 |

Gas

6. (cont'd) Licences and Long-Term Orders to Import Propane, Butanes, Ethane and Ethylene as at 31 December 1985 (Cubic Metres)

| Importer | Licence or Order Number | Point of Import | Term of Licence or Order From | To | Maximum Volumes |
|---------------------------------|-------------------------|-----------------|----------------------------------|----------|----------------------------|
| 4. Imperial Oil Ltd. | EBU-911-80 ^a | Sarnia, Ont. | 80-09-01 | 90-08-31 | N/S |
| 5. PanCanadian Gas Company Ltd. | EBU-134-74 ^a | Sarnia, Ont. | 79-01-01 | 79-12-31 | 213 822 |
| | | | 80-01-01 | 80-12-31 | 213 822 |
| | | | 81-01-01 | 81-12-31 | 213 822 |
| | | | 82-01-01 | 82-12-31 | 213 822 |
| | | | 83-01-01 | 83-12-31 | 213 822 |
| | | | 84-01-01 | 84-12-31 | 240 550 |
| | | | 85-01-01 | 85-12-31 | 240 550 |
| | | | 86-01-01 | 86-12-31 | 240 550 |
| | | | 87-01-01 | 87-12-31 | 240 550 |
| | | | 88-01-01 | 88-12-31 | 240 550 |
| | | | 89-01-01 | 89-12-31 | 240 550 |
| | | | 90-01-01 | 90-12-31 | 240 550 |
| 6. Texasco Canada Inc. | EBU-916-82 ^a | Sarnia, Ont. | 82-07-01 | 92-06-30 | N/S |
| ETHANE | | | | | |
| 7. Dome Petroleum Ltd. | GO-1-76 ^a | Windsor, Ont. | 78-01-01 | 85-12-31 | 3 949 m ³ /year |
| ETHYLENE | | | | | |
| 8. Dow Chemical of Canada Ltd. | EYL-2-76 ^a | Windsor, Ont. | 78-01-01 | 97-12-31 | 68 038 860 kg/year |

a — This licence/order authorizes an import of product which has been previously exported.

b — This is an import-export licence/order whereby product imported is subsequently exported.

N/S Not Specified

Gas

7. Exports of Natural Gas (Millions of Cubic Metres)

| Exporter | Licence or Order Number | 1984 Actual | 1985 Preliminary | Cumulative to 1985-12-31 |
|--------------------------------------|----------------------------|----------------|---------------------|-----------------------------|
| Alberta & Southern Gas Co. Ltd | GL-3 | 4 727.5 | 4 743.8 | 103 817.2 |
| | GL-16 | 522.8 | 1 304.3 | 31 598.9 |
| | GL-24 | 135.6 | 477.7 | 27 975.0 |
| | GL-35 | 1 194.2 | 2 034.0 | 27 216.7 |
| Amoco Canada Petroleum Co. Ltd. | GO-1-85 | .0 | 26.1 | 26.1 |
| | GO-10-85 | .0 | 17.2 | 17.2 |
| Canadian-Montana Pipe Line Company | GL-5 | .0 | .0 | 6 386.4 |
| | GL-17 | .0 | .0 | 3 035.3 |
| | GL-25 | .0 | .0 | 3 470.0 |
| | GL-36 | — | .0 | 1 183.2 |
| | GL-52 | 184.9 | 224.1 | 756.3 |
| | GL-3-79 | 2.1 | 3.8 | 14.7 |
| Consolidated Natural Gas Limited | GL-44 ^a | 368.9 | 333.0 | 5 573.9 |
| | GL-61 | 844.6 | 881.9 | 4 410.2 |
| Czar Resources Limited | GO-7-84 | 2.7 | 58.5 | 61.2 |
| | GO-9-85 | .0 | 6.3 | 6.3 |
| Dome Petroleum Limited | GO-11-85 | .0 | 55.8 | 55.8 |
| | GO-18-85 | .0 | 2.3 | 2.3 |
| ICG Transmission Holdings Ltd. | GL-28 | 8.7 | 9.7 | 124.8 |
| | GL-29 | 146.3 | 91.7 | 2 646.2 |
| | GL-30 ^b | 226.9 | 171.8 | 4 066.7 |
| Niagara Gas Transmission Limited | GL-55 | 228.1 | 227.6 | 800.7 |
| Northridge Petroleum Marketing, Inc. | GO-2-85 | .0 | 66.2 | 66.2 |
| | GO-13-85 | .0 | 13.7 | 13.7 |
| Pan-Alberta Ltd. | GL-58 | 3 054.6 | .0 | 7 619.7 |
| | GL-59 | 1 145.3 | .0 | 4 169.7 |
| | GL-62 | 19.2 | .0 | 19.2 |
| | GL-63 | 57.6 | .0 | 57.6 |
| | GL-96 | 81.5 | 2 480.0 | 2 561.5 |
| | GL-97 | 193.2 | 3 414.1 | 3 607.3 |
| Poco Petroleums Limited | GO-19-85 | .0 | 47.7 | 47.7 |
| ProGas Limited | GL-56 | 1 541.3 | 1 136.3 | 6 304.8 |
| | GO-14-85 | .0 | 13.8 | 13.8 |
| | GO-15-85 | .0 | 88.3 | 88.3 |
| | GO-16-85 | .0 | 59.6 | 59.6 |

Gas

7. (cont'd.) Exports of Natural Gas (Millions of Cubic Metres)

| Exporter | Licence or Order Number | 1984 Actual | 1985 Preliminary | Cumulative to 1985-12-31 |
|--------------------------------|-------------------------|-------------|------------------|--------------------------|
| Sulpetro Limited | GL-57 | 72.3 | .0 | 1 867.6 |
| | GL-82 | 358.6 | 740.0 | 1 098.6 |
| | GO-4-84 | 102.6 | .0 | 102.5 |
| | GO-8-85 | .0 | .9 | .9 |
| TransCanada Pipelines Limited | GL-18 | 309.9 | 786.9 | 20 347.8 |
| | GL-19 | 140.8 | 147.5 | 2 030.2 |
| | GL-20 | 377.5 | 309.5 | 13 467.6 |
| | GL-21 ^c | 5 488.2 | 5 159.7 | 97 969.7 |
| | GL-37 | 854.1 | 1 103.4 | 26 552.9 |
| | GL-38 | 492.5 | 362.5 | 6 710.9 |
| | GL-39 | 17.5 | 70.5 | 893.2 |
| | GL-42 ^c | 2 042.6 | 1 920.1 | 30 297.6 |
| | GL-43 | .0 | .0 | 1 335.8 |
| | GL-60 | 1 251.1 | 1 322.7 | 7 259.9 |
| | GL-83 | 69.1 | 382.2 | 451.3 |
| | GL-89 | .0 | 229.3 | 229.3 |
| | GO-1-84 | .7 | .0 | .7 |
| | GO-2-84 ^c | 40.1 | .0 | 40.1 |
| Union Gas Limited | GL-64 | 104.3 | 13.2 | 901.7 |
| Westcoast Transmission Limited | GL-4 | 1 452.2 | 605.7 | 28 795.4 |
| | GL-41 | 1 681.0 | 2 594.7 | 71 780.6 |
| | GO-5-84 | 27.4 | .0 | 27.4 |
| GROSS EXPORTS | | 29 568.5 | 33 738.1 | 560 035.9 |
| NET EXPORTS ^d | | 21 401.8 | 26 153.5 | 422 087.9 |

a — This licence authorizes an export of natural gas which the licensee has imported near Willow Creek, Sask. pursuant to licence GLI-5.

b — This licence authorizes an export near Sprague, Man. for import near Rainy River, Ont.

c — This licence authorizes an export near Emerson, Man. for import near Sault Ste Marie and Sarnia, Ont. to serve the eastern Canadian markets.

d — Excludes volumes of licences/orders under footnotes.

— Amount too small to be expressed.

Gas

8. Imports of Natural Gas (Millions of Cubic Metres)

| Importer | Licence or Order Number | 1984 Actual | 1985 Preliminary | Cumulative to 1985-12-31 |
|--|----------------------------|----------------|---------------------|-----------------------------|
| Border Utilities Ltd. | GO-2-66 | .9 | .8 | 18.3 |
| Canadian Western Natural Gas Company Ltd. | GO-6-66 | 1.2 | .0 | 32.2 |
| | GO-6-84 | 1.4 | 2.6 | 4.0 |
| | GO-5-85 | .0 | 1.6 | 1.6 |
| Consolidated Natural Gas Limited | GLI-5 ^a | 374.9 | 338.8 | 5 661.1 |
| ICG Transmission Holdings Ltd. | GL-30 ^b | 226.9 | 171.8 | 4 066.7 |
| TransCanada Pipelines Limited | GL-21 ^c | 5 469.0 | 5 131.7 | 97 817.2 |
| | GL-42 ^c | 2 035.4 | 1 909.9 | 30 413.6 |
| | GL-2-84 ^c | 39.5 | .0 | 39.5 |
| GROSS IMPORTS | | 8 149.2 | 7 557.2 | 138 054.2 |
| NET IMPORTS ^d | | 3.5 | 5.0 | 56.1 |

a — This licence authorizes an import of natural gas which the licensee will subsequently export near Emerson, Man. pursuant to licence GL-44.

b — This licence authorizes an import of natural gas which the licensee has previously exported near Sprague, Man.

c — This licence authorizes an import of natural gas which the licensee has previously exported near Emerson, Man. This natural gas serves Canadian markets.

d — Excludes volumes of licences/orders under footnotes.

Gas

9. Exports of Propane, Butanes, Ethane and Ethylene Under Licence and Orders (Cubic Metres)

| Exporter | Licence or Order Number | 1984 Actual | 1985 Preliminary |
|--|----------------------------|----------------|---------------------|
| PROPANE | | | |
| Amoco Canada Petroleum Company Limited | GL-32 | 92 643 | 92 696 |
| | EPR-918-79 ^a | 791 739 | 931 910 |
| | EPR-929-83 ^b | 0 | — |
| | EPR-933-85 ^b | — | 706 |
| Cochin Pipeline Ltd. | EPR-932-85 ^a | — | 3 923 |
| Dome Petroleum Limited | GL-31 | 133 254 | 133 254 |
| | GL-46 ^b | 195 521 | — |
| | GL-917-79 ^a | 510 834 | 803 539 |
| | GL-930-84 ^b | 294 783 | 334 038 |
| Imperial Oil Limited | EPR-922-80 ^a | 428 816 | 90 833 |
| PanCanadian Gas Products Limited | GL-34 | 0 | 0 |
| | EPR-919-79 ^a | 257 415 | 259 896 |
| Petro-Canada Inc. | EPR-931-85 ^b | — | 299 |
| GROSS EXPORTS | | | |
| NET EXPORTS ^c | | 2 705 005 | 2 651 094 |
| BUTANES | | | |
| Amoco Canada Petroleum Company Limited | EBU-133-74 ^a | 374 304 | 579 198 |
| | EBU-928-83 ^b | 0 | — |
| | EBU-932-85 ^b | — | 7 452 |
| Cochin Pipeline Ltd. | EBU-931-85 ^a | — | 1 619 |
| Dome Petroleum Limited | EBU-1-74 ^b | 72 766 | — |
| | EBU-132-74 ^a | 452 031 | 608 932 |
| | EBU-929-84 ^b | 212 244 | 279 163 |
| Imperial Oil Limited | EBU-911-80 ^a | 230 238 | 58 723 |
| PanCanadian Gas Products Limited | EBU-134-74 ^a | 103 347 | 112 363 |
| Petro-Canada Inc. | EBU-930-85 ^b | — | 0 |
| Texaco Canada Incorporated | EBU-916-82 ^a | 20 636 | 81 000 |
| GROSS EXPORTS | | | |
| NET EXPORTS ^c | | 1 465 566 | 1 728 450 |
| | | 0 | 0 |

Gas

9. (con't) Exports of Propane, Butanes, Ethane and Ethylene Under Licence and Orders (Cubic Metres)

| Exporter | Licence or Order Number | 1984 Actual | 1985 Preliminary |
|--------------------------------|----------------------------|----------------|---------------------|
| ETHANE | | | |
| Dome Petroleum Limited | GL-45 ^b | 176 909 | — |
| | GL-47 | 2 369 640 | 822 686 |
| | GL-51 | 2 563 818 | 2 368 413 |
| | GO-1-76 ^a | 0 | 0 |
| GROSS EXPORTS | | | |
| NET EXPORTS ^c | GL-47 | 1 184 820 | 364 556 |
| | GL-51 | 1 279 419 | 1 246 010 |
| | | 2 464 239 | 1 610 566 |
| Kilograms | | | |
| EHYLENE | | | |
| Dow Chemical of Canada Limited | EYL-1-76 ^d | 26 779 360 | 0 |
| | EYL-2-76 ^a | 68 030 860 | 156 093 364 |
| GROSS EXPORTS | | | |
| NET EXPORTS ^c | | 94 810 220 | 156 093 344 |
| | | 0 | 0 |

a — This licence/order authorizes an export of product for subsequent import.

b — This is an import-export licence/order whereby product exported has been previously imported.

c — Excludes volumes of licences/orders under footnotes.

d — This licence authorizes an export of ethylene at Elmore, Sask. with the provision that the exported product may be imported at Windsor, Ont. and re-exported at Sarnia or Windsor, Ont. In 1983 and 1984, all that was exported at Elmore, Sask. was imported at Windsor, Ont., and there was no further movement of the product.

— Amount too small to be expressed

Gas

10. Imports of Propane, Butanes, Ethane and Ethylene Under Licence and Orders (Cubic Metres)

| Importer | Licence or Order Number | 1984 Actual | 1985 Preliminary |
|--|----------------------------|----------------|---------------------|
| PROPANE | | | |
| Amoco Canada Petroleum Company Limited | EPR-918-79 ^a | 800 673 | 930 176 |
| | EPR-929-83 ^b | 0 | — |
| | EPR-933-85 ^b | — | 706 |
| Cochin Pipeline Ltd. | EPR-932-85 ^a | — | 3 923 |
| Dome Petroleum Limited | GL-46 ^b | 102 525 | — |
| | GL-917-79 ^a | 550 745 | 754 077 |
| | GL-930-84 ^b | 274 413 | 393 680 |
| Imperial Oil Limited | EPR-922-80 ^a | 409 462 | 90 833 |
| PanCanadian Gas Products Limited | EPR-919-79 ^a | 257 415 | 259 896 |
| Petro-Canada Inc. | EPR-931-85 ^a | — | 285 |
| GROSS IMPORTS | | | |
| NET IMPORTS ^c | | 2 395 233 | 2 433 576 |
| BUTANES | | | |
| Amoco Canada Petroleum Company Limited | EBU-133-74 ^a | 374 218 | 574 548 |
| | EBU-928-83 ^b | 0 | — |
| | EBU-932-85 ^b | — | 7 452 |
| Cochin Pipeline Ltd. | EBU-931-85 ^a | — | 1 619 |
| Dome Petroleum Limited | EBU-1-74 ^b | 73 812 | — |
| | EBU-132-74 ^a | 452 035 | 606 483 |
| | EBU-929-84 ^b | 209 492 | 279 815 |
| Imperial Oil Limited | EBU-911-80 ^a | 216 779 | 58 723 |
| PanCanadian Gas Products Limited | EBU-134-74 ^a | 103 347 | 111 363 |
| Petro-Canada Inc. | EBU-930-85 ^a | — | 0 |
| Texaco Canada Incorporated | EBU-916-82 ^a | 25 363 | 74 024 |
| GROSS IMPORTS | | | |
| NET IMPORTS ^c | | 1 455 046 | 1 714 027 |
| | | 0 | 0 |

Gas

10. (cont'd.) Imports of Propane, Butanes, Ethane and Ethylene Under Licence and Orders (Cubic Metres)

| Importer | Licence or Order Number | 1984 Actual | 1985 Preliminary |
|--------------------------------|----------------------------|----------------|---------------------|
| ETHANE | | | |
| Dome Petroleum Limited | GL-45 ^b | 5 710 | — |
| | GO-1-76 ^a | 0 | 0 |
| | GL-47 | 696 518 | 406 153 |
| | GL-51 | 1 150 526 | 1 030 967 |
| | GO-1-83 | 159 994 | — |
| | GO-3-84 | 99 159 | 43 339 |
| | GO-3-85 | — | 25 056 |
| | GO-7-85 | — | 8 386 |
| GROSS IMPORTS | | | |
| NET IMPORTS ^c | | 2 111 907 | 1 513 961 |
| | GO-1-83 | 159 994 | N/A |
| | GO-3-84 | 99 159 | 43 339 |
| | GO-3-85 | N/A | 25 056 |
| | GO-7-85 | N/A | 8 386 |
| | | 259 153 | 76 781 |
| Kilograms | | | |
| ETHYLENE | | | |
| Dow Chemical of Canada Limited | EYL-1-76 ^d | 26 779 360 | 0 |
| | EYL-2-76 ^a | 68 030 860 | 156 093 364 |
| GROSS IMPORTS | | | |
| NET IMPORTS ^c | | 94 810 220 | 156 093 344 |
| | | 0 | 0 |

a — This licence/order authorizes an import of product which has been previously exported.

b — This is an import-export licence/order whereby product imported is subsequently exported.

c — Excludes volumes of licences/orders under footnotes.

d — This licence authorizes an import of ethylene which has been previously exported at Elmore, Sask. with the provision that the imported product at Windsor, Ont. may be re-exported at Sarnia or Windsor, Ont. In 1983 and 1984, all that was exported at Elmore, Sask. was imported at Windsor, Ont., and there was no further movement of the product.

— Amount too small to be expressed

N/A Not Applicable

Gas

11. Total Net Exports of Propane and Butanes (Cubic Metres)

| Exporter | Propane | | Butanes | |
|--|------------------|---------------------|------------------|---------------------|
| | 1984 Actual | 1985 Preliminary | 1984 Actual | 1985 Preliminary |
| Amoco Canada Petroleum Company Ltd. ^a | 313 098 | 331 502 | 388 397 | 389 104 |
| Atlantic Speedy Propane Limited | 70 | 491 | — | — |
| Burnell Gas of Canada Ltd. | 30 220 | 42 943 | — | — |
| Can-Am Liquids Corp. Ltd. | 12 934 | 12 856 | 1 684 | 2 631 |
| Canadian Enterprise Gas Products Ltd. | 37 864 | 23 809 | 46 503 | 28 035 |
| Canadian Superior Oil Ltd. | 54 034 | 45 221 | 90 747 | 90 703 |
| Canstates Energy | 41 161 | 37 170 | 21 663 | 38 018 |
| Chevron Canada Resources Ltd. | 128 289 | 104 508 | 6 873 | 1 617 |
| Consumers' Co-Operative Refineries Limited | 0 | 1 344 | 0 | 0 |
| Dillingham Construction Ltd. | 0 | 361 | — | — |
| Dome Petroleum Limited ^a | 766 940 | 739 063 | 603 533 | 636 684 |
| Dominion Propane Corp. | — | 478 | — | — |
| Elbow River Resources | — | 0 | — | 0 |
| Elgin Resources Limited | 585 | 1 308 | 14 862 | 5 725 |
| Gas Supply (Minn.) Ltd. | — | 5 268 | — | 485 |
| Gulf Canada Resources Inc. | 302 913 | 151 588 | 6 221 | 474 |
| Gulliver Energy Ltd. | — | 0 | — | 738 |
| Home Oil Company Limited | 32 771 | 34 595 | 59 513 | 57 245 |
| Husky Oil Operations Ltd. | 621 | 0 | 716 | 0 |
| ICG Liquid Gas Ltd. | 37 223 | 57 705 | — | — |
| Imperial Oil Limited | 215 413 | 210 590 | 331 671 | 316 837 |
| Kildair Service Ltee | 0 | 590 | 0 | — |
| Koch Hydrocarbons Canada | 2 168 | 3 193 | 58 260 | 56 337 |
| M-P Oils Limited | 7 597 | 5 081 | 15 944 | 17 421 |
| Mobil Oil Canada Ltd. | 123 559 | 89 341 | 51 982 | 22 239 |
| NGL Supply (1985) Ltd. | 2 424 | 574 | 15 210 | 6 409 |
| Northern Petro Products Corp. Ltd. | 234 | 0 | 0 | — |
| Olco Oil | — | 0 | — | — |
| PanCanadian Gas Products Limited ^a | 162 318 | 208 483 | 91 207 | 110 689 |
| Petro-Canada Inc. | 435 929 | 377 833 | 295 313 | 266 895 |
| Petrowest Petroleum Ltd. | 14 383 | 10 086 | 28 916 | 6 713 |
| Pounder Emulsions Ltd. | 1 355 | 1 379 | 2 177 | 1 975 |
| Raymond Gas Liquids Marketing Ltd. | 7 374 | 13 786 | 2 067 | 20 257 |
| Rivecal Energy Ltd. | — | 0 | 244 | 369 |
| Shell Canada Limited | 171 690 | 186 101 | 131 731 | 171 821 |
| Stephens Energy Limited | 63 670 | 49 962 | 80 543 | 81 132 |
| Stittco Energy Limited | — | 0 | — | 0 |
| Sunoco Inc. | 2 233 | 5 970 | 11 801 | 6 402 |
| Texaco Canada Inc. | 118 102 | 88 842 | 133 202 | 116 090 |
| Ultramar Canada Inc. | — | 0 | — | 0 |
| Union Oil Company of Canada Limited | 18 074 | 12 869 | 366 | 729 |
| Union Texas Canada Ltd. | 1 254 | — | — | — |
| Westcan Energy Ltd. | — | 349 | — | 9 394 |
| TOTAL | 3 106 500 | 2 855 239 | 2 491 346 | 2 463 168 |

a — Includes net export volumes under licences.

— Amount too small to be expressed

Oil

1. Certificate Issued During 1985 Approving New Oil Pipeline Facilities Including Pipeline Construction Exceeding 40 Kilometres in Length

| Applicant | Certificate No. | Issued | Facilities | Estimated Cost(\$) |
|-------------------------|-----------------|----------|---|--------------------|
| Murphy Oil Company Ltd. | OC-36 | 85-05-14 | Construction of 45 km of 219.1 mm and 4.5 km of 168.3 mm pipelines, Alberta | 4 800 000 |

Oil

2. Orders Issued During 1985 Approving New Oil Pipeline Facilities Including Pipeline Construction Not Exceeding 40 Kilometres in Length

| Applicant | Order No. | Issued | Facilities | Estimated Cost(\$) |
|---------------------------------------|-----------|----------|---|--------------------|
| Interprovincial Pipe Line Limited | XO-1-85 | 85-05-31 | Modifications and additions to pipeline system from Edmonton, Alberta to Gretna, Manitoba | 87 000 000 |
| Manito Pipelines Ltd. | XO-2-85 | 85-06-19 | Construction of 24 km of 168.3 mm and 88.9 mm pipelines, Alberta and Saskatchewan. Pumping, metering and associated facilities, Alberta | 2 400 000 |
| Trans Mountain Pipe Line Company Ltd. | XO-3-85 | 85-07-10 | Modifications and additions to pipeline system from Edmonton, Alberta to Kamloops, British Columbia | 6 180 000 |

Oil

3. Orders Issued During 1985 Approving Modifications and Additions to Existing Oil Pipeline Facilities

| Applicant | Order No. | Issued | Facilities | Estimated Cost (\$) |
|---------------------------------------|-----------|----------|--|---------------------|
| Cochin Pipe Lines Ltd. | XOM-6-85 | 85-04-03 | Injection facilities | 198 000 |
| Interprovincial Pipe Line Limited | XOM-2-85 | 85-02-06 | Tie-in to Waskada Pipe Line | 286 000 |
| Interprovincial Pipe Line Limited | XOM-8-85 | 85-05-23 | Delivery modifications and additions | 144 000 |
| Interprovincial Pipe Line Limited | XOM-12-85 | 85-10-16 | Station and tankage modifications, buildings, computer equipment, etc. | 13 783 700 |
| Manito Pipelines Ltd. | XOM-9-85 | 85-06-26 | Control and measurement system improvements | 470 310 |
| Montreal Pipe Line Limited | XOM-4-85 | 85-02-13 | Replacement of calibration tank, rectifier replacement, and tools | 51 300 |
| Murphy Oil Company Limited | XOM-11-85 | 85-09-25 | Pumping and metering facilities | 797 000 |
| Petroleum Transmission Company | XOM-7-85 | 85-04-11 | Block valves, office building and warehouse | 396 350 |
| Trans-Northern Pipelines Inc. | XOM-3-85 | 85-02-20 | Station modifications, transportation equipment, etc. | 1 817 000 |
| Trans Mountain Pipe Line Company Ltd. | XOM-1-85 | 85-01-23 | Station equipment, tanks, buildings and grounds, automotives and work equipment, etc. | 7 528 470 |
| Trans Mountain Pipe Line Company Ltd. | XOM-5-85 | 85-03-13 | Additional pumping units and station modifications | 3 111 000 |
| Trans Mountain Pipe Line Company Ltd. | XOM-10-85 | 85-07-04 | Tanks, station equipment computer automation systems, etc. | 1 223 200 |
| Trans Mountain Pipe Line Company Ltd. | XOM-13-85 | 85-11-20 | Tank | 462 000 |
| Trans Mountain Pipe Line Company Ltd. | XOM-14-85 | 85-12-18 | Pipe replacements, station and tankage modifications, buildings and housing, grounds, transportation, work equipment, etc. | 12 860 390 |

Oil

4. Exports of Canadian Crude and Equivalent—January to December 1984 and January to May 1985 (Cubic Metres)

| Company | Destination | Jan. to May 1985 | | 1984 | |
|--|-----------------------|------------------|---------------|---------------|---------------|
| | | Total | Daily Average | Total | Daily Average |
| Amoco Production Company | Whiting, Indiana | 955 655.20 | 6 328.84 | 1 407 337.32 | 3 845.18 |
| Ashland Oil Inc. | St. Paul, Minnesota | 317 216.00 | 2 100.77 | 266 415.40 | 727.91 |
| Avant Petroleum Inc. | Chicago, Illinois | 24 366.30 | 161.37 | .00 | .00 |
| C. Itou International Petroleum Co. Ltd. | Japan | .00 | .00 | 71 759.20 | 196.06 |
| Citgo Petroleum Corporation | Gulf Coast, U.S.A. | 39 643.70 | 262.54 | .00 | .00 |
| Clark Oil & Refining Corporation | Blue Island, Illinois | 805 236.30 | 5 332.69 | 828 172.90 | 2 262.77 |
| Coastal States Trading Inc. | Gulf Coast, U.S.A. | 60 283.80 | 399.23 | .00 | .00 |
| Conoco Inc. | Billings, Montana | 396 717.40 | 2 627.27 | 178 746.90 | 488.38 |
| Consumers Power | Marysville, Michigan | 29 823.60 | 197.51 | 106 760.40 | 291.70 |
| Exxon Company, U.S.A. | Billings, Montana | 26 127.25 | 173.03 | 48 655.80 | 132.94 |
| Farmers Union Central Exchange, Incorp. | Laurel, Montana | 398 864.30 | 2 641.49 | 871 824.85 | 2 382.04 |
| Gladieux Refining Co. | Fort Wayne, Indiana | 18 493.00 | 122.47 | .00 | .00 |
| Koch Refining Company | Pine Bend, Minnesota | 3 208 050.20 | 21 245.37 | 7 968 962.70 | 21 773.12 |
| Laketon Refining Corp. | Laketon, Indiana | 183 758.90 | 1 216.95 | 385 338.50 | 1 052.84 |
| Marathon Petroleum Company | Detroit, Michigan | 462 780.90 | 3 064.77 | 745 500.90 | 2 036.89 |
| Mobil Oil Corporation | Ferndale, Washington | 94 516.10 | 625.93 | .00 | .00 |
| Montana Refining Company | Joliet, Illinois | 1 317 619.30 | 8 725.96 | 1 834 764.60 | 5 013.02 |
| Murphy Oil USA Inc. | Great Falls, Montana | 4 769.60 | 31.59 | .00 | .00 |
| NOCO Energy Corp. | Superior, Wisconsin | 178 837.30 | 1 184.35 | 321 729.70 | 879.04 |
| Petrogulf Oil and Refining Ltd. | Tonawanda, New York | 52 750.60 | 349.34 | 174 959.10 | 478.03 |
| Phibro Energy Inc. | Gulf Coast, U.S.A. | 41 349.30 | 273.84 | .00 | .00 |
| Providence Petroleum Inc. | Gulf Coast, U.S.A. | 50 219.50 | 332.58 | .00 | .00 |
| Rock Island Refining Corporation | Gulf Coast, U.S.A. | 48 393.70 | 320.49 | .00 | .00 |
| Shell Oil Company | Rock Island, Indiana | 871.60 | 5.77 | .00 | .00 |
| Standard Oil Company | Anacortes, Washington | 147 335.20 | 975.73 | 198 906.20 | 543.46 |
| Sun Oil Trading Company | Toledo, Ohio | 96 909.70 | 641.79 | .00 | .00 |
| Texaco U.S.A. | Marcus Hook, Penn. | 99 929.20 | 661.78 | .00 | .00 |
| Total Petroleum, Inc. | Gulf Coast, U.S.A. | 50 042.30 | 331.41 | .00 | .00 |
| U.S. Oil & Refining Co. | East coast, U.S.A. | 42 152.10 | 279.15 | .00 | .00 |
| Union Oil Company of California | Marysville, Michigan | 274 494.60 | 1 817.85 | 106 258.50 | 290.32 |
| United Refining Company | Anacortes, Washington | 362 628.00 | 2 401.51 | .00 | .00 |
| Various | Alma, Michigan | 124 746.50 | 826.14 | 142 436.70 | 389.17 |
| | Washington | 16 709.30 | 110.66 | .00 | .00 |
| | Ohio | 320 032.90 | 2 119.42 | 195 631.70 | 534.51 |
| | Lemont, Illinois | 339 497.70 | 2 248.33 | 714 266.00 | 1 951.55 |
| | Warren, Pennsylvania | 1 068 709.80 | 7 077.55 | 1 694 064.49 | 4 628.59 |
| | Various | 67 088.10 | 444.29 | 45.30 | .12 |
| TOTAL | | 11 726 619.25 | 77 659.73 | 18 262 537.16 | 49 897.64 |

4(a) Exports of Canadian Crude and Equivalent - 1985^e

Light Crude Oils including Condensate: 33 406 cubic metres per day
Heavy Crude Oils : 41 901 cubic metres per day

Total 75 307 cubic metres per day

(e) — Estimated

Oil

5. Export Charges in 1985 for Crude Oil (Dollars per Cubic Metre)

| Type | Jan. ^a | Feb. | Mar. | Apr. | May | June ^b |
|---------------------------|-------------------|-------|-------|-------|-------|-------------------|
| Mixed Blend | 32.55 | 12.70 | 25.30 | 36.30 | 36.30 | 36.30 |
| Waterton Condensate | 23.10 | 5.15 | 17.75 | 28.75 | 28.75 | 28.75 |
| Light Canadian Sour | 31.00 | 13.05 | 25.65 | 36.65 | 36.65 | 36.65 |
| Reagan | 34.20 | 16.25 | 28.85 | 39.85 | 39.85 | 39.85 |
| Rangeland | 33.65 | 15.70 | 28.30 | 39.30 | 39.30 | 39.30 |
| Lloydminster-type Blends | 34.50 | 10.25 | 22.85 | 31.35 | 31.35 | 31.35 |
| Wainwright/Kinsella Blend | 32.45 | 8.20 | 20.80 | 29.30 | 29.30 | 29.30 |
| Fosterton | 41.50 | 16.30 | 28.90 | 37.40 | 37.40 | 37.40 |
| Smiley-Coleville | 32.65 | 8.40 | 21.00 | 29.50 | 29.50 | 29.50 |
| Bow River | 36.45 | 12.20 | 24.80 | 33.30 | 33.30 | 33.30 |
| Midale | 39.50 | 15.25 | 27.85 | 36.35 | 36.35 | 36.35 |
| Chauvin | 32.80 | 8.55 | 21.15 | 29.65 | 29.65 | 29.65 |
| Cold Lake | 21.35 | — | 9.70 | 18.20 | 18.20 | 18.20 |

a— Before the general reduction of \$8.50 per cubic metre.

b— Administered pricing ended on 1 June. Export charges continued to be paid on exports in June which originated from 31 May inventories.

Oil

6. Export Charges in 1985 for Refined Petroleum Products (Dollars per Cubic Metre)

| Type | Jan. | Feb. | Mar. | April | May |
|--|-------|--------------------|-------|-------|-------|
| (ONTARIO, PRAIRIE PROVINCES AND BRITISH COLUMBIA) | | | | | |
| Motor Gasoline | | | | | |
| ex Ontario | 26.20 | 17.00 | 15.00 | 15.00 | 15.00 |
| ex Prairies | 26.20 | 11.00 ^a | — | — | — |
| ex B.C. | 30.89 | 20.00 | 18.00 | 18.00 | 18.00 |
| Middle Distillate | | | | | |
| ex Ontario | 35.61 | 21.00 | 18.00 | 18.00 | 18.00 |
| ex Prairies | 30.89 | 18.00 ^a | 12.00 | 12.00 | 12.00 |
| ex B.C. | 30.89 | 24.00 | 21.00 | 21.00 | 21.00 |
| Heavy Fuel Oil | | | | | |
| ex Ontario | 37.20 | 34.00 | 28.00 | 22.00 | 16.00 |
| ex Prairies | 30.89 | 30.89 | 28.00 | 22.00 | 16.00 |
| ex B.C. | 46.41 | 48.55 | 48.03 | 48.03 | 48.03 |
| Partially Processed | | | | | |
| Oil | 26.20 | 11.00 | 11.00 | 11.00 | 11.00 |
| Asphalt | 30.89 | 30.89 | 28.00 | 22.00 | 16.00 |
| (EASTERN CANADIAN REFINERIES, QUEBEC AND ATLANTIC PROVINCES) | | | | | |
| Petroleum Products ^b | | | | | |
| ex Montreal Refineries | 52.28 | 54.42 | 53.93 | 53.93 | 53.93 |
| ex Other Refineries | 46.41 | 48.55 | 48.03 | 48.03 | 48.03 |
| Asphalt | 38.01 | 38.73 | 38.73 | 36.68 | 36.68 |

a— The charge on motor gasoline and middle distillate produced in the Prairie Provinces and exported on or after 15 February is nil and \$12.00 per cubic metre, respectively.

b— Petroleum products include motor gasoline and gasoline components, middle distillate, heavy fuel oil and partially processed oil.

Note: Effective 1 June 1985 exports of refined petroleum products are no longer subject to a charge.

Oil

7. Exports of Petroleum Products and Imports of Heavy Fuel Oil (Cubic Metres)

| Month | Partially Processed Oil | Motor Gasoline and Jet B | Exports | | | Imports Heavy Fuel Oil |
|----------|-------------------------------|--------------------------------|-------------------|----------------------|----------|------------------------------|
| | | | Heavy Fuel Oil | Middle Distillate | Asphalt | |
| January | 81 263.7 | 51 828.8 | 133 470.2 | 102 430.5 | 484.0 | 369 477.2 |
| February | 21 902.7 | 265 375.2 | 148 874.0 | 298 353.7 | 387.8 | 734 893.4 |
| March | 28 110.6 | 364 404.1 | 122 357.9 | 245 053.7 | 2 677.5 | 762 603.8 |
| April | 36 157.3 | 271 608.8 | 158 043.3 | 357 039.0 | 4 658.6 | 827 507.0 |
| May | 74 884.2 | 516 248.3 | 155 236.9 | 336 420.0 | 32 316.6 | 1 115 106.0 |
| June | 10 631.2 | 88 841.1 | 167 483.6 | 68 711.7 | .0 | 335 667.6 |
| July | 7 427.6 | 178 854.9 | 139 886.8 | 67 775.9 | .0 | 393 945.2 |
| August | 23 630.9 | 114 937.7 | 166 869.4 | 126 123.0 | .0 | 431 561.0 |
| Sept. | 17 662.2 | 183 820.9 | 175 792.8 | 372 664.2 | .0 | 749 940.1 |
| Oct. | 49 449.1 | 128 000.7 | 109 775.7 | 376 541.4 | .0 | 663 766.9 |
| Nov. | 5 491.4 | 232 692.1 | 216 847.4 | 271 092.9 | .0 | 726 123.8 |
| Dec. | 7 865.0 | 306 535.0 | 173 047.0 | 302 601.0 | .0 | 790 048.0 |
| TOTAL | 364 475.9 | 2 703 147.6 | 1 867 685.0 | 2 924 807.0 | 40 524.5 | 7 900 640.0 |
| | | | | | | 704 995.1 |

Note: Effective 1 June 1985 exports of asphalt and imports of heavy fuel oil are no longer subject to authorization by the Board.

Oil

8. Exchanges of Crude Oil and Equivalent with the United States via Mid-Continent Pipeline Systems—January to May 1985 (Cubic Metres)

| Licence Holder | Exchange Partner | Exported | Imported |
|-------------------|------------------|----------|----------|
| Imperial Oil Ltd. | Gladieux | 3 438 | 0 |
| Petro Canada Inc. | Murphy | 10 152 | 9 612 |
| Shell Canada Ltd. | Shell Oil Co. | 257 453 | 270 027 |
| Shell Canada Ltd. | Conoco Inc. | 119 531 | 132 416 |
| Suncor | Sun Oil | 94 445 | 84 239 |
| TOTAL | | 485 019 | 496 294 |

8.(a) Estimate of Exchanges of Crude Oil and Equivalent with United States via Mid-Continent Pipeline Systems - 1985

Exports 989 129
Imports 970 238

Electricity

1. Certificate Issued During 1985 Approving an International Power Line

| Applicant | Certificate No. | Issued | Facilities | Hearing Commenced | Estimated Cost (\$) |
|-----------------|-----------------|--------------|---|-------------------|---------------------|
| 1. Hydro-Québec | EC-III-22 | 7 March 1985 | One 120 kV single circuit international power line extending 17.6 km from the Bedford substation to a point on the international boundary line located 450 m east of international marker 620A in the municipality of Saint-Armand-Ouest in the Province of Québec. | 1 October 1984 | 8 160 000 |

Electricity

2. Order Issued During 1985 Relating to International Power Lines

| Applicant | Order No. | Issued | Facilities |
|-----------------|-----------|--------------|---|
| 1. Hydro-Québec | XE-1-85 | 12 Nov. 1985 | One international power line extending from the distribution transformer designated as M2KIC, to a point on the international boundary line located 6 m north-east of marker no. 353A in the municipality of Saint-Théophile. This single circuit single phase line operates at a nominal voltage of 120/240 V. |

Electricity

3. Licences Issued During 1985 to Export Electric Power and Energy

| Applicant | Class | Megawatts | Annual Gigawatt Hours | Term | | Hearing Commenced | Issued | Licence No. |
|-------------------|----------------------------|-----------|-----------------------|----------|----------|-------------------|--------------|-------------|
| | | | | From | To | | | |
| 1. Hydro-Québec | Firm | 150 | 1314 | 85-09-22 | 95-09-22 | 1 Oct. 1984 | 25 Jan. 1985 | EL-168 |
| 2. Hydro-Québec | Interruptible ^a | — | 1752 | 85-09-01 | 96-02-29 | 1 Oct. 1984 | 25 Jan. 1985 | EL-169 |
| 3. Manitoba Hydro | Firm | 500 | 3405 | 93-05-01 | 05-04-30 | 5 Nov. 1984 | 12 Feb. 1985 | EL-170 |
| 4. Hydro-Québec | Firm | 48 | 205 | 86-03-15 | 90-11-30 | 24 Sep. 1985 | 19 Nov. 1985 | EL-171 |
| 5. Hydro-Québec | Interruptible ^b | 100 | 657 | 86-01-01 | 90-12-31 | 24 Sep. 1985 | 19 Nov. 1985 | EL-172 |
| 6. Hydro-Québec | Interruptible | 40 | 263 | 86-01-01 | 90-12-31 | 24 Sep. 1985 | 19 Nov. 1985 | EL-173 |

a — limited by exports under licence EL-168

b — limited by exports under licences EL-171 and EL-173

Electricity

4. Orders Issued During 1985 Relating to Export of Electric Power and Energy

| Applicant | Class | Kilowatts | Annual Kilowatt Hours | Term | | | Order No. |
|---|------------------|-----------|-----------------------|----------|----------|--------------|-----------|
| | | | | From | To | Issued | |
| 1. St. Lawrence Power | Interruptible | — | 250 000 000 | 85-05-01 | 88-04-30 | 19 Apr. 1985 | ELO-188 |
| 2. Hydro-Québec | Firm | 20 | 35 000 | 85-04-15 | 88-04-14 | 13 Mar. 1985 | ELO-189 |
| 3. Hydro-Québec | Firm | 75 | 200 000 | 85-04-15 | 88-04-14 | 13 Mar. 1985 | ELO-190 |
| 4. Hydro-Québec | Firm | 20 | 100 000 | 85-04-15 | 88-04-14 | 13 Mar. 1985 | ELO-191 |
| 5. Hydro-Québec | Firm | 35 | 65 000 | 85-04-15 | 88-04-14 | 13 Mar. 1985 | ELO-192 |
| 6. Hydro-Québec | Firm | 65 | 200 000 | 85-04-15 | 88-04-14 | 13 Mar. 1985 | ELO-193 |
| 7. Hydro-Québec | Firm | 10 | 15 000 | 85-04-15 | 88-04-14 | 13 Mar. 1985 | ELO-194 |
| 8. Hydro-Québec | Firm | 2 | 2 000 | 85-04-15 | 88-04-14 | 13 Mar. 1985 | ELO-195 |
| 9. Hydro-Québec | Firm | 57 | 150 000 | 85-04-15 | 88-04-14 | 13 Mar. 1985 | ELO-196 |
| 10. The New Brunswick Electric Power Commission | Equichange | 30 000 | 250 000 000 | 85-04-03 | 88-04-02 | 3 Apr. 1985 | ELO-197 |
| 11. Ontario Hydro | Firm | 100 | 200 000 | 85-05-15 | 88-05-14 | 14 May 1985 | ELO-198 |
| 12. The Canadian Transit Company | Firm | 100 | 25 000 | 85-08-01 | 88-07-30 | 27 May 1985 | ELO-199 |
| 13. Manitoba Hydro | Firm | 900 | 7 884 000 | 85-10-01 | 88-09-30 | 22 Aug. 1985 | ELO-200 |
| 14. The New Brunswick Electric Power Commission | Firm | 200 | 250 000 | 85-10-21 | 88-10-20 | 22 Aug. 1985 | ELO-201 |
| 15. The New Brunswick Electric Power Commission | Firm | 40 | 75 000 | 85-10-21 | 88-10-20 | 22 Aug. 1985 | ELO-202 |
| 16. The New Brunswick Electric Power Commission | Firm | 50 | 20 000 | 85-10-21 | 88-10-20 | 22 Aug. 1985 | ELO-203 |
| 17. The Detroit and Canada Tunnel Corporation | Firm | 300 | 2 000 000 | 85-12-01 | 88-11-30 | 26 Nov. 1985 | ELO-204 |
| 18. British Columbia Hydro And Power Authority | Firm | 200 | 600 000 | 85-12-01 | 88-11-30 | 26 Nov. 1985 | ELO-205 |
| 19. The New Brunswick Electric Power Commission | Firm | 50 000 | 230 000 000 | 85-12-01 | 86-10-31 | 27 Nov. 1985 | ELO-206 |
| 20. Cedars Rapids Transmission Company | Firm | — | 20 000 000 | 86-01-01 | 88-12-31 | 26 Nov. 1985 | ELO-207 |
| 21. The New Brunswick Electric Power Commission | Carrier Transfer | 50 000 | 250 000 000 | 85-12-01 | 88-11-30 | 26 Nov. 1985 | ELO-208 |

Electricity

5. Exports of Electric Energy (Megawatt Hours)

| Exporter | Licence Number | Licence Authorization | | Gross Energy Exported | | | Reported Dollar Value of Export | |
|---|----------------|-------------------------|-------------------------|-----------------------|---------------|-----------------------|---------------------------------|---------------|
| | | Firm | Interruptible | Firm | Interruptible | Exchange ^a | Firm | Interruptible |
| NEW BRUNSWICK | | | | | | | | |
| 1. Maine and New Brunswick Electrical Power Company Limited | EL-22 | 250 000 | — | 76 520 | — | — | 1 364 344 | — |
| | EL-23 | — | 25 000 | — | — | — | — | — |
| 2. Fraser Inc. | EL-122 | 400 000 | — | 341 380 | — | — | 15 697 994 | — |
| | EL-123 | — | 50 000 | — | — | — | — | — |
| 3. The New Brunswick Electric Power Commission | EL-64 | 3 504 000 | — | 290 239 | — | -930 | 26 358 750 | — |
| | EL-137 | 876 000 | — | 854 213 | — | -10 767 | 52 016 170 | — |
| | EL-138 | 876 000 | — | 854 213 | — | -10 767 | 51 910 384 | — |
| | EL-139 | 92 000 | — | 46 829 | — | -2 976 | 3 098 837 | — |
| | EL-140 | — | 6 482 400 ^b | — | 3 277 664 | -86 | — | 158 582 723 |
| | EL-141 | 1 226 400 | — | — | — | 400 043 | — | — |
| | EL-142 | 140 000 | — | — | — | — | — | — |
| | EL-143 | — | 300 000 | — | 175 086 | -8 479 | — | 10 704 511 |
| | EL-144 | 250 000 | — | — | — | — | — | — |
| | EL-145 | — | 179 000 | — | — | -454 | — | — |
| | EL-150 | 1 138 000 | — | 213 553 | — | -2 691 | 12 999 119 | — |
| | AO-1-ELO-197 | 50 | — | — | — | — | — | — |
| | ELO-201 | — | — | — | — | — | — | — |
| to ELO-203 | 345 | — | 246 | — | — | — | 19 373 | — |
| ELO-206 | 230 000 | — | 475 | — | — | — | 147 947 | — |
| ELO-208 | 250 000 | — | — | — | — | — | — | — |
| TOTAL | | | 2 677 668 | 3 452 750 | 362 893 | 163 612 918 | 169 287 234 | |
| QUEBEC | | | | | | | | |
| 4. Cedars Rapids Transmission Company Company Limited | EL0-207 | 20 000 | — | — | — | — | — | — |
| 5. Hydro-Québec | EL-96 | 3 000 000 | — | 3 000 000 | — | — | 124 052 630 | — |
| | *EL-131 | — | 320 000 | — | — | — | — | — |
| | *EL-132 | 189 000 | — | 100 329 | — | — | 4 211 521 | — |
| | *EL-133 | — | 525 000 ^c | — | 136 763 | — | — | 5 818 182 |
| | EL-151 | — | 7 000 000 | — | 330 281 | — | — | 12 932 558 |
| | EL-152 | — | 23 564 000 ^d | — | 836 673 | — | — | 25 482 394 |
| | EL-153 | — | 23 564 000 ^d | — | 4 804 699 | -6 373 | — | 143 120 907 |
| | EL-154 | 11 220 000 ^e | — | — | — | — | — | — |
| | EL-155 | 13 140 000 ^e | — | — | — | — | — | — |
| | EL-156 | 25 000 | — | — | — | 2 647 | — | — |
| | EL-168 | 1 314 000 | — | 322 166 | — | — | 14 659 883 | — |
| | EL-169 | — | 1 752 000 ^f | — | 53 367 | -96 | — | 1 654 112 |
| EL-180 | — | — | — | — | — | — | — | — |
| to ELO-182 | — | — | — | — | — | — | — | — |
| and ELO-189 | — | — | — | — | — | — | — | — |
| to ELO-196 | 1 807 | — | 707 | — | — | — | 74 595 | — |
| TOTAL | | | — | 3 423 202 | 6 161 783 | -3 822 | 142 998 629 | 189 008 153 |

Electricity

5. (cont'd) Exports of Electric Energy (Megawatt Hours)

| Exporter | Licence Number | Licence Authorization | | Gross Energy Exported | | | Reported Dollar Value of Export | |
|---|----------------|-----------------------|-------------------------|-----------------------|---------------|-----------------------|---------------------------------|---------------|
| | | Firm | Interruptible | Firm | Interruptible | Exchange ^a | Firm | Interruptible |
| ONTARIO | | | | | | | | |
| 6. Ontario Hydro | EL-32 | 15 000 | — | 873 | — | — | 1 747 | — |
| | EL-134 | — | 10 000 000 | — | — | 980 575 | — | — |
| | EL-135 | 10 500 000 | — | 3 895 438 | — | — | 174 580 941 | — |
| | EL-136 | — | 25 000 000 ^g | — | 4 665 911 | 239 144 | — | 175 498 612 |
| | ELO-198 | 200 | — | 5 | — | — | 480 | — |
| 7. Canadian Niagara Power Company Limited | EL-161 | — | 500 000 | — | 434 760 | 8 283 | — | 18 701 282 |
| 8. Boise Cascade Canada Ltd. | ELO-177 | — | 70 000 | — | 143 | — | — | 48 133 |
| 9. The Detroit and Windsor Subway Company | ELO-204 | 2 000 | — | 1 138 | — | — | — | — |
| 10. The Canadian Transit Company | ELO-199 | 25 | — | 24 | — | — | — | — |
| 11. St. Lawrence Power Company | EL-158 | — | 250 000 | — | — | 21 | — | — |
| | EL-159 | — | 150 000 | — | 97 774 | — | — | 3 205 748 |
| | EL-160 | — | 150 000 | — | — | 5 892 | — | — |
| | ELO-188 | — | 250 000 | — | 232 707 | — | — | 7 231 196 |
| TOTAL | | | 3 897 478 | 5 431 295 | 1 233 915 | 174 583 168 | 204 684 971 | |
| MANITOBA | | | | | | | | |
| 12. Manitoba Hydro | EL-97 | — | 1 500 000 | — | 1 256 735 | — | — | 17 504 788 |
| | EL-98 | 876 000 | — | 175 570 | — | — | 6 157 197 | — |
| | EL-99 | 262 800 | — | 227 045 | — | — | 3 719 651 | — |
| | EL-100 | 800 000 | — | — | — | — | — | — |
| | EL-101 | 2 500 000 | — | — | — | 19 700 | — | — |
| | EL-102 | 3 270 000 | — | — | — | — | — | — |
| | EL-103 | — | 12 000 000 ^h | — | 3 930 599 | -1 866 | — | 67 568 361 |
| and | ELO-176 | — | — | — | — | — | — | — |
| | ELO-200 | 7 899 | — | 1 850 | — | — | 57 278 | — |
| | ELO-186 | 131 000 | — | 50 010 | — | — | 1 128 459 | — |
| TOTAL | | | 454 475 | 5 187 334 | 17 834 | 11 062 585 | 85 073 149 | |

Electricity

5. (cont'd) Exports of Electric Energy (Megawatt Hours)

| Exporter | Licence Number | Licence Authorization | | Gross Energy Exported | | | Reported Dollar Value of Export | |
|--|----------------|-----------------------|-------------------------|-----------------------|---------------|-----------------------|---------------------------------|---------------|
| | | Firm | Interruptible | Firm | Interruptible | Exchange ^a | Firm | Interruptible |
| SASKATCHEWAN | | | | | | | | |
| 13. Saskatchewan Power | EL-117 | 438 000 | — | 11 650 | — | — | 1 760 175 | — |
| | EL-119 | — | 876 000 ⁱ | — | 116 095 | 35 255 | — | 1 516 024 |
| | EL-120 | 876 000 ⁱ | — | — | — | — | — | — |
| TOTAL | | | | 11 650 | 116 095 | 35 255 | 1 760 175 | 1 516 024 |
| BRITISH COLUMBIA | | | | | | | | |
| 14. British Columbia Hydro and Power Authority | EL-162 | 6 000 000 | — | 1 825 880 | — | — | 52 414 128 | — |
| | EL-163 | — | 15 000 000 ^j | — | 8 448 050 | -567 577 | — | 217 486 804 |
| | EL-164 | — | 3 000 000 | — | — | 742 216 | — | — |
| | ELO-179 | — | — | — | — | — | — | — |
| and | ELO-205 | 15 500 | — | 14 562 | — | — | 648 196 | — |
| 15. Cominco Ltd. | EL-146 | 50 000 | — | — | — | — | — | — |
| | EL-147 | — | 1 100 000 | — | 417 743 | 9 176 | — | 10 642 500 |
| | EL-148 | 250 000 | — | — | — | 65 975 | — | — |
| | EL-149 | — | 1 000 000 | — | — | — | — | — |
| 16. West Kootenay Power and Light Company | ELO-187 | 50 | — | 24 | — | — | 906 | — |
| TOTAL | | | | 1 840 466 | 8 865 793 | 249 790 | 53 064 230 | 228 129 304 |
| TOTAL CANADA^k | | | | | | | | |
| | | | | 12 304 939 | 29 215 050 | 1 895 865 | 547 081 705 | 877 698 835 |

a — Exchange is no value energy. It includes inadvertent and circulating flow, equichange, storage adjustment transfer and wheeling or carrier transfer.

b — Total exports should not exceed 6 482.4 GW.h when combined with the amounts exported under Licences EL-64, EL-137, EL-138, EL-150 and Order ELO-206.

c — Total exports should not exceed 525 GW.h when combined with the amount exported under Licence EL-132.

d — Total exports not to exceed 23 564 GW.h when combined with exports made pursuant to another licence under which the energy is transmitted over the lines authorized by Certificate of Public Convenience and Necessity Nos. EC-III-15 and EC 10.

e — Total exports under EL-154 and EL-155 should not exceed 13 140 GW.h when combined together.

f — Total exports should not exceed 1752 GW.h when combined with amounts exported under licence EL-168

g — Total exports should not exceed 25 000 GW.h when combined with the amount exported under Licence EL-135.

h — Total exports should not exceed 12 000 GW.h when combined with the amounts exported under Licences EL-97, EL-98, EL-99, EL-100, EL-101 and EL-102.

i — Total exports under Licences EL-119 and EL-120 should not exceed 876 GW.h. when combined together.

j — Total exports should not exceed 15 000 GW.h when combined with exports under Licence EL-162.

k — Excludes \$460 861 revenue for wheeling, transmission, unit rental and storage transfer charges.

* Expired during 1985

Senior Staff of the Board ¹

Office of the Executive Director

| | |
|------------------|--------------------------------------|
| R.St.G. Stephens | Executive Director |
| G.H. Shaw | Manager, Program Planning and Review |
| J. Vallières | A/Chief, Internal Audit |

Finance Branch

| | |
|----------|------------|
| W. Ganim | A/Director |
|----------|------------|

Personnel Branch

| | |
|---------------|----------|
| J.L. Thompson | Director |
|---------------|----------|

Energy Regulation

| | |
|------------|------------------|
| P.L. Miles | Director General |
|------------|------------------|

Economics Branch

| | |
|-------------------|--|
| M. Segal | Director |
| R.E. Jackson, Jr. | A/Assistant Director, Economic Analysis |
| J.S. Oh | Assistant Director, Regulatory Economics and Energy Statistics |
| E. Ruddick | Assistant Director, Forecasting and Energy Market Analysis |

Energy Supply Branch

| | |
|------------|---|
| W.A. Hiles | Director |
| E. Kutney | Assistant Director, Geology and Reserves |
| K. Poole | Assistant Director, Gas Supply |
| G.C. Hos | Assistant Director, Oil and Alternative Energy Supply |

Electric Power Branch

| | |
|--------------|--------------------------------|
| A.N. Karas | Director |
| W.H. Correll | A/Assistant Director, Planning |
| T. Olszewski | Assistant Director, Operations |

Gas Branch

| | |
|----------------|--|
| S.R. Ironstone | Director |
| A.L. Browne | Assistant Director, Gas Industry and Market Analysis |
| R.S. Green | Assistant Director, Gas Regulations and Licences |

Oil Branch

| | |
|-------------|----------------------------------|
| R.M. White | Director |
| B.P. Leakey | Assistant Director, Evaluation |
| B.A. Wells | A/Assistant Director, Operations |

Pipeline Regulation

| | |
|--------------|------------------|
| K.W. Vollman | Director General |
|--------------|------------------|

Pipeline Engineering and Operations Branch

| | |
|---------------|---|
| E.L.M. Gordon | Director |
| F. Jeglic | A/Assistant Director, Engineering |
| G. Byrtus | Assistant Director, Construction and Operations |

Financial Regulatory Branch

| | |
|--------------|--------------------|
| H.K. Pau | Director |
| G.S. Johnson | Assistant Director |
| C.M. Yeates | Assistant Director |

Environment and Right of Way Branch

| | |
|----------------|----------------------------------|
| P.A. Carr | Director |
| J.A. Hodges | Assistant Director, Environment |
| G.E. Marquardt | Assistant Director, Right-of-Way |

Law Branch

| | |
|-------------------------|---------------------------|
| F.H. Lamar ² | General Counsel |
| S.K. Fraser | Assistant General Counsel |

Office of the Secretary

| | |
|---------------|--|
| J.S. Klenavic | Secretary |
| N. Park | A/Assistant Secretary, Communications |
| G. Laing | Assistant Secretary, Regulatory |
| T.W. Miles | Assistant Director, Administrative Support |

Information Technology Branch

| | |
|--------------|---|
| D. Emmens | Director |
| K.E. Begley | Assistant Director, Professional Services |
| J.M. Outrata | Assistant Director, Systems Integration |

1 As of 31 December 1985

2 Miss S.K. Fraser was appointed General Counsel on 2 January 1986, on the retirement of Mr. F.H. Lamar.

Canadä

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JUL 5 1990

